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APRIL 1960

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by
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Cover by EMSH: *Have spacesuit, can't travel*

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THE WORLD OF TOMORROW

IN New York City twenty years ago, a world emerging from the Depression took time out for fun, and for a glimpse of the future. The bad days lay behind and war lay ahead, but fun there was, and the glimpse of the future was as true as the war that was to come.

Way out at the end of the subway tracks in the borough of Queens was a place called "The Astoria Dump." It was the pit for all the trash of a giant metropolis. The Astoria Dump was permanently on fire. The Fire Department kept hoses going day and night, not to put out the fire — there was no hope of that — but to keep it from spreading. A sludgy creek ambled, in complete discouragement, between cliffs of garbage as high as houses. The inhabitants of the Astoria Dump were gigantic flies and rats.

Here was the site for the New York World's Fair of 1939 — whose theme was "The World of Tomorrow." Would it be possible to move the mountains of rotting garbage, dispossess the fierce things that fed on it, clear away the stench — and finally, when it never could be done before, put out the permanent fire — so that "The World of Tomorrow" could be built here?

Deliberate symbolism? No — the fair would pay for the elimination of the dump.

Fleets of earthmovers and an army of men with the ruthless weapons of peace leveled the garbage cliffs, rooted out the vermin, and covered all with clean earth through which no smell of decay or tongue of flame could ever escape.

The Astoria Dump was no more, but it had to be built upon if it was not to be merely a buried pest hole.

Landscapers moved in, and pavers, and carpenters, light engineers, hydraulics men — an army as huge and as busy as the one that had interred Astoria Dump — and they turned it into "Flushing Meadows" and made the World of Tomorrow rise there.

Beautiful?

Yes, very beautiful — the high spire of the Trylon and the great ball of the Perisphere, the sodium-vapor lamps along the avenues, the leaping illuminated fountains in the Lagoon of Nations, the Futurama and Vodor, the General Electric building with its man-made lightning flying around, captive, inside a wire-screen cage — truly it was the World of Tomorrow, just as advertised, and it was

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the first time that millions from the world of that day could take a good look at what the future promised in the way of plenty, leisure and joy.

There were girlie shows on the Midway, barkers huckstering as they have done since antiquity, and perhaps as they will do in perpetuity, crude and garish souvenirs. They didn't matter. The World's Fair of 1939 was none of those things.

It was the bright, wonderful World of Tomorrow, and all the braver and more wonderful for having been erected on the horror that had been Astoria Dump, and if people came to see the bare babes, they stayed to see the shining future.

For the future was there indeed, beyond the rot of dictatorship that had to blasted out, the human vermin to be destroyed, the fire of war extinguished.

The World of Tomorrow is to return to New York City in 1964 to the same site — Flushing Meadows, nee Astoria Dump.

No need now to bury a nightmare in order to construct a dream. Meadows — real meadows, green to the eye, sweet to the nose — are there to hold marvels that the World of Tomorrow of 1939 thought unimaginably distant, too far away to dare to speculate upon, but that are realities a scant quarter of a century later.

The science fiction of 1939 did more than dare. It saw how soon so many of these "unimaginably distant" marvels would happen. It dared look at the war that was to come, and beyond the war to the kinds of "peace" that were all too likely — for the one that did come about was not a whit more likely than the others — and beyond that, and further still, into every aspect of the future that was at all discernible, however faintly, a generation ago.

The marvels of the World of Tomorrow of 1964 are in these pages today, along with the actual world of 1964, whatever it may look like, for no one kind of world of 1964 is a certainty when science packs the progress of centuries into a single generation, and steepens the curve ever and ever more sharply, so that one week's impossibility is next week's fact, or one week's inevitability next week's couldn't-have-happened.

The process that science fiction uses is one familiar to businessmen and government statisticians — extrapolation, carrying forward known data or theory to future probability. The process is more than valid; it's absolutely essential. But carry known data forward without exploring *possible* factors and the result can't help being funny — or the very deadliest tragedy. Here are some examples of the funny and terribly unfunny.

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When the Louisiana Purchase was made at the beginning of the 19th century, the territory of the U.S.A. was doubled. Not till 2400 A.D., it was estimated, could the new lands be tamed and settled. True enough — with only animal-drawn transportation. But along came the locomotive to hoot at the "safe" estimate.

In a Connecticut Yankee in King Arthur's Court, Mark Twain notes units of currency are so small that buckshot has real purchasing power, and astonishes the natives with the fact that a man in the 19th century can earn as much as five or ten dollars a week. Present wages would have astonished him just as much, though he himself was using the unending trend away from small units of currency.

The patent office belief at the end of the 19th century that everything had been discovered, and it was only a matter of filling in the decimal points, is common knowledge. What still stuns is how the belief could have been held when major breakthroughs were being readied in the labs right at that moment.

Before World War II, Capt. B. H. Liddell-Hart was the leading Allied military theoretician. Modern defense, he said, had become so powerful that the cost of overwhelming it would be unbearably prohibitive. What he neglected to speculate on was that a Maginot Line could be made entirely useless by one smash at one point, or that a country like Russia would pay the exorbitant price to overcome Finland's strategically far better Mannerheim Line, or that Singapore's defenses, all aimed seaward, could be negated by a land attack from the rear, jungle or no jungle. How could he have known? By following the *published* military thinking on both Allied and Axis sides. In exploring all possibilities, the boldest military thinking comes close to science fiction. In both, "impossible" and "inevitable" are meaningless words, just as they are to basic research — because they are the most costly, impractical and escapist ones in the language.

It took clear vision to see past the horror of Astoria Dump to the World of Tomorrow in 1939. It takes clearer vision still to see past the horror of two hostile hemispheres to the World of Tomorrow of 1964.

And beyond that?

There are all sorts of worlds and all sorts of tomorrows, and only the extrapolative skill and daring of science fiction can see their foreshadowings. There is threat in the fact that the Russians know this better than the Free World does — nothing could be more escapist than thinking they've assigned it a crash-priority rating for escapist reading.

— H. L. GOLD

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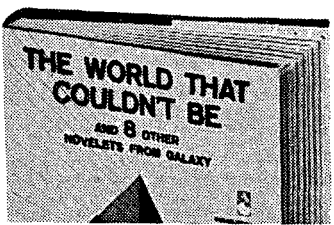

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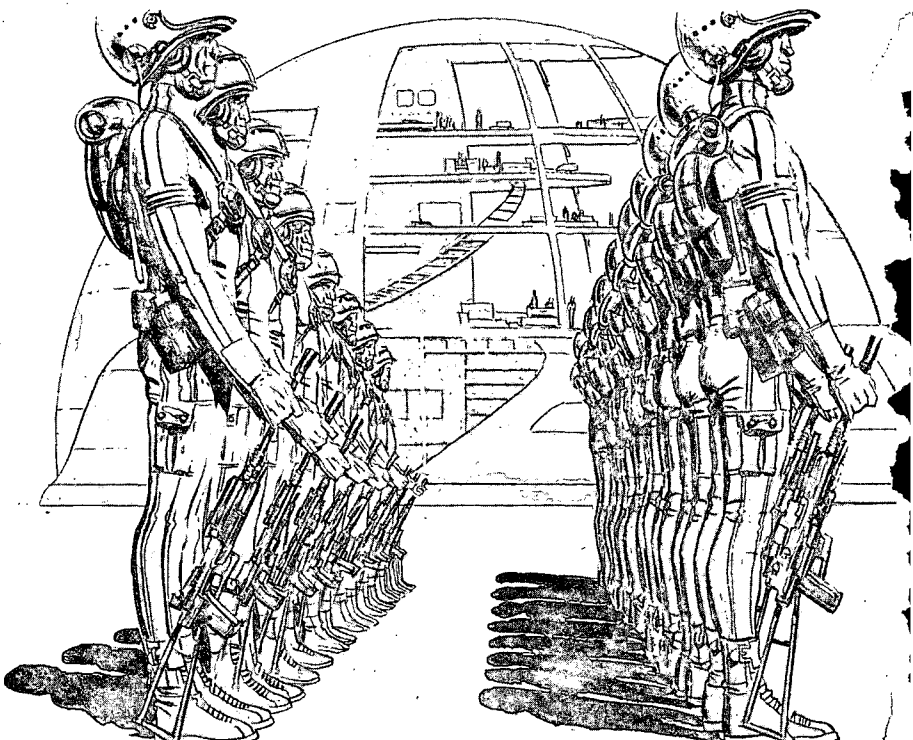
By EARL GOODALE

SUCCESS STORY

Illustrated by WOOD



ONCE my name was Ameet Ruxt, my skin was light blue, and I was a moderately low-ranking member of the Haldorian Empire. Or should I say I was a member of the lower income group? No, definitely "low-ranking," because, in a warrior society, even one with as high a technological level as a statistician sits low on the totem pole. He is handed the wrong end of the stick

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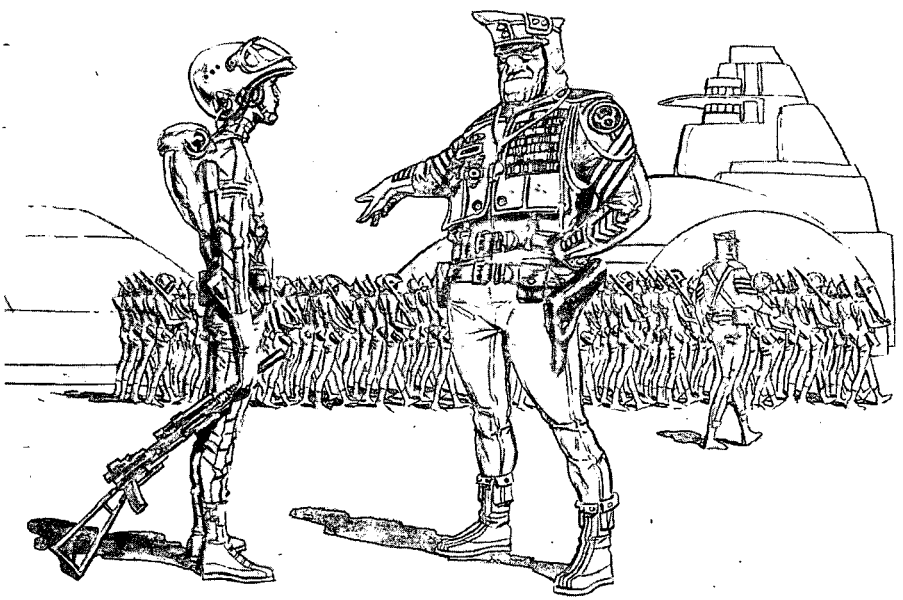
Terra resounded to the triple toast of the

Haldorian hordes: For Haldor! For Glory!

And for Heaven's sake, let us out of here!



— call it what you will; he's the one who doesn't acquire even one wife for years and he hasn't a courtesy title. He's the man they draft into their Invasion Forces — the Haldorians are always invading someone — and turn him into a Fighter Basic in a third of a year.

"Look," I'd complained to the burly two-striper in the Receiving Center, "I'm a trained statistician with a degree and . . ."

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"Say Sir, when you address me."

I started over again. "I know, Sir, that they use statisticians in the service. So if Haldor needs me in the service it's only sensible that I should work in statistics."

The Hweetoral looked bored, but I've found out since that all two-stripers looked bored; it's because so many of them have attained, at that rank, their life's ambition. "Sure, sure. But we just got a directive down on all you paper-pushers. Every one of you from now on out is headed for Fighter Basic Course. You know, I envy you, Ruxt. Haldor, what I wouldn't give to be out there with real men again! Jetting down on some new planet — raying down the mongrels till they yelled for mercy — and grabbing a new chunk of sky for the Empire. Haldor! That's the life!" He glanced modestly down at his medalled chest.

"Yes, Sir," I said, "it sure is. But look at my examination records you have right there. Physically I'm only a 3 and you have to have a 5 to go to Basic Fighter. And besides," I threw in the clincher, though I was a bit ashamed of it, "my fighting aptitude only measures a 2!"

The Hweetoral sneered unsubtly and grabbed a scriber with heavy fingers. A couple of slashes, a couple of new entries, and lo, I was now a 5 in both departments. I was qualified in every respect.

"See," he said, "that's your first lesson in the Service, Ruxt. Figures don't mean a thing, because they can always be changed. That's something a figure pusher like you has to learn. So—" he shoved out that ponderous hand and crushed mine before I could protect myself —"good luck, Ruxt. I know you'll get through that course — alive, I mean." He chuckled heartily. "And I know men!"

HE was right. I got through alive. But then, 76.5 per cent of draftees do get through the Basic Fighter Course, alive. But for me it took a drastic rearrangement of philosophy.

Me, all I'd ever wanted was a good life. An adequate income, art and music, congenial friends, an understanding wife — just one wife was all I'd ever hoped for. As you can see, I was an untypical Haldorian on every point.

After my first day in Basic Fighter Course I just wanted to stay alive.

"There's two kinds of men we turn out here," our Haldor told us as we lined up awkwardly for the first time (that scene so loved by vision-makers). We new draftees called our Trontar our Haldor because he actually had the power over our bodies that the chaplains assured us the Heavenly Haldor had over our liberated spirits. Our Trontar looked us over with his

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fatherly stare, flexing his powerful arm muscles so that his three tattooed stripes rippled and danced. "Yeah," he went on, "two kinds of men: Fighting men and dead men!" The Trontar grinned that fighting Haldorian grin you see all your lives on the Prop Sheets. "And I'll tell you something, men. When you leave here — all Fighters Basic — I'm going to envy you. Yeah, I'll really envy you gutsy killers when you go out in that big Out-There and grab yourselves a new chunk of sky." He paused and studied our faces. "Now we're gonna run, and I do mean run, two full decades. The last four men in get to do it over again, and pull kitchen duty tonight too."

I tried, as others have tried, to slip quietly out of Basic Fighter. I tried being sick, but following sick report one found oneself doing a full day's training — after the understanding medics had shoved some pep pills into you. I demanded a physcial examination. They weren't going to push me around.

After a couple of days in solitary, I asked in a nice way for physical evaluation.

Well, I asked. I wasn't very smart in those days.

They weren't interested in my story of how my records had been falsified or in my fighting aptitude.

"Look, draftee," the psycho-man said after I finally got to him, "the fact that you've got to see me shows you have enough of a fighting aptitude. Your Trontar didn't encourage you to request evaluation, did he? And he isn't going to like you very much when you report back to your platoon, is he?"

I shuddered. "Not exactly."

"Call me Sir."

"No, Sir. But I was desperate, Sir. I don't think I can stand..."

"DRAFTEE, you know that some unfortunate men break down in training and that we have to take them out. Maybe you've already lost some that way. Suppose you were brought in here, gibbering, yowling, and drooling — I guess we'd have to cure you and send you back home as non-fighter material, eh?"

Someone up here liked me! Here was a tip on how to escape back to the old quiet life. I nodded agreeably.

"But you know, don't you," he said softly, "that first we run a thorough test on our drooling draftee? Say it's you . . ."

I nodded again.

"We most always detect fakers. And you know there's a death penalty for any Haldorian attempting to escape his duty." He smiled sadly, and reminiscently.

I nodded. Maybe someone up here didn't like me.

"So we'd shoot you dead with one of those primitive projectile

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weapons, as an object lesson for both you and the draftees we had remaining."

I nodded and tried to show by my countenance how much I approved of people being shot dead with primitive weapons.

"But suppose," he went on, "that you'd really cracked up or that you'd faked successfully?"

"Yes, Sir?" Hope returned, hesitantly and on tip-toes, ready to flee.

"Then we'd cure you," he said. "But the cure unfortunately involves the destruction of your higher mental faculties. And so there'd be nothing for it but to ship you off to one of the mining planets. That's standard procedure, if you didn't know. But I think you'll be all right now, don't you?"

Hope fled. I assured him that I'd be just fine and reported back, on the double, to my training platoon.

"Just in time, Ruxt," my Trontar greeted me. "Back for full duty, I take it? That's the Haldorian spirit!" He turned to the platoon which was lined up like three rows of sweaty statues. "Men, remember what I told you about taking cover when you're under fire — and staying under cover? Just suppose we suddenly came under fire — flat trajectory stuff — out here on this flat exercise ground with no cover except in that latrine pit over there. Would any of you hesitate to dive into that latrine pit? And once in there, safe and sound, would any of you not stay there until I gave the word to come out?"

A perceptible shudder passed like a wave over the platoon. We knew the Trontar did not ask pointless questions.

"Of course you wouldn't," he assured us, "and you'd even stay in there all day under this hot sun if you had to. Ruxt! You're rested and refreshed from visiting the hospital. You demonstrate how it's done."

It was a long day, even though my Trontar kindly sent some sandwiches over to me at high noon. I didn't eat much. But I did do a lot of thinking.

THERE was one last hope. I wrote a letter to a remote clan relative who was supposed to have a small amount of influence.

It was a moving letter. I told how my test results had been falsified, what beasts our trainers were, how the medics refused to retest me — very much the standard letter that new Haldorian trainees write. As I went out to mail this plea, one evening, I met two of my fellow trainees starting out on a night march in full field equipment.

"How come?" I asked, instantly fearful that I'd missed some notice on the bulletin board.

"We wrote letters," one of them said simply.

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"The Trontar censors all our mail," said the other. "Didn't you you know? Oh, well, neither did we."

As they marched off, I made a small bonfire out of my letter after first, almost, just throwing it away — before I remembered that the Hweetorals checked our waste cans. What a man has to do to hold two measly stripes!

Acceptance of the inevitable is the beginning of wisdom, says the ancient Haldorian sage. I put in an application for transfer to the Statistical Services to be effective upon *completion* of Basic Fighter Course.

"Statistical Services?" the Company Clerk asked. "What's that? Anyhow, you're going to be a Fighter Basic, if you get through this training," he said darkly. The Company Clerk was a sad victim of our Haldorian passion for realistic training; he had lacked one day of completing Fighter Basic when he'd let his leg dangle a bit too long after he'd scaled a wall, and the training gentlemen had unemotionally shot it off. As it turned out, our efficient surgeon/replacers had been unable, for some technical reason, to grow back enough leg for full duty. So there was nothing for it but to use the man as could be best done. They'd made him a clerk — mainly because that was the specialty they were shortest of at the time.

"Who says you can put in for Statistical Services?" the Company Clerk demanded.

"Reg 39-47A." I was learning my way around. The night before I was on orderly duty in the office. I had tracked down the chapter and verse which, theoretically, allowed a man to change his destiny.

"Know the Regs, do you? Starting to be a trouble-maker, huh? Yeah, Ruxt, I'll put in your application."

I turned away with some feeling of relief. This might possibly work.

The Company Clerk called me back. "You know the Regs so good, Ruxt," he said. "How come you didn't ask me for permission to leave? I'm cadre, you know." He leaned back in his chair and grinned at me. "Just to help you remember the correct Haldorian deportment I'm putting you on kitchen duty for the next three nights. That way," he grinned again, "you can divide up your five hours of sleep over three nights instead of crowding them all into one."

Poor deluded Company Clerk! I actually averaged three hours of sleep every one of those three nights — after I found out that the mess Trontar would accept my smoking ration.

I felt that I was beginning to understand the system, a little and at long last, particularly after I saw my co-workers in the kitchen do-

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doing what should have been my work.

II

THEN we started combat training, and then we started losing our normal 23.5 per cent.

It wasn't too bad as long as they stuck to the primitive stuff. I mean, you can see arrows and spears coming at you, and even if you have had only the five hours of sleep you can either duck the projectiles or catch them on your shield. And with the medics on the alert, the wounds are painful but seldom fatal. You just end up with a week's hospitalization and slip back to the next training group. But when they go up to the explosively-propelled solids, when the Trontar smirks and says: "Men, this is called a boomer, or a banger, or maybe sometimes a firestick, depending on what planet you're fighting on," and when he holds up a contraption of wood and metal with a hole at one end and a handle on the other — then, Draftee, look out!

It takes time to learn. It isn't till you associate a bang in the distance with a perforated man beside you that you do learn. And when you finally come under fire from our regular production weapons like rays — well!

You might wonder why they run us through the entire history of weapons starting with the sling and ending with the slithers — the name servicemen give to those Zeta Rays that diverge from line of sight to drop in on a dug-in enemy. The usual explanation is that Haldorians are still invading places where the natives still use such things as bows and arrows. But I think, myself, that it's something the Mil Prop guys figured out. The idea is, as I see it, to run you right through the whole course of our fighting, invading Haldorian history, and in that way to make a better fighter out of you. And you do get rid of the death-prones before there's much time or work invested in them — or before their inevitable early death means the failure of a mission. Haldoria — most practical of Empires!

But they didn't make a fighter of me. All they did was to reinforce my natural survival instinct considerably, acquaint me with the tortuous ways of the service, and give me a great urge for a peaceful existence. But to all appearances, as I stood in the orderly room after graduation, I was the ideal poster-picture of a Haldorian, completely uniformed with polished power boots and rayer, a crawler to the higher-ups and a stomper on the lower-downs, a Fighter Basic with no compassion but with a certified aptitude for advancement to at least the rank of Trontar.

"Fighter Basic Ruxt," the Dispositions Hweetoral announced.

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"Here, Sir!"

"Your application for transfer to Statistical Services has been disapproved." The two-striper's expression showed what he, as a fighting man, thought of the Statistical Services. "But we've got a real assignment for you, Ruxt! The 27th Invasion Force is all set to drop on a new system. You're lucky, Ruxt, that you put in that application. We had to hold you till it bounced. Your buddies got shipped to those rear-echelon guard outfits, but you're going to a real fighting one. It should be a good invasion — this new system's got atomic fission, I hear. And I'd like to tell you something, Ruxt..."

"I know what, Sir," I said. "You envy me."

THE 27th was a real fighting unit all right: they had their own neckerchief, their own war cry, and a general who was on his way up. Now they had me.

And they were going to get another system for the Haldorian Empire.

You see, those intelligent worms, or maybe they are slugs — I'm a bit vague on universe geography — over on the next Galaxy but one, give us Haldorians all sorts of difficulties. They insist on freedom, self-determination, and all that sort of thing. That's all very well, but they insist on them for themselves. Our high-level planners decided that another solar system would make a better offensive set-up for Haldoria. The planners, I understand, have all sorts of esoteric theories about the ideal shape and size of an offensive unit. They ring in time and something related to time which makes Galaxy distances differ according to which direction you are travelling. As I say, esoteric.

The only thing that mattered to me was that some technicians had fed some data into a computer and it had hiccupped and said: "You'll need such-and-such a planet to control such-and-such a solar system, and that will give you a better offensive set-up." Then the computer hiccuped again and said: "You'll need to draft and train Ameet Ruxt to help on this little job of taking over this planet called Terra, or Earth."

That's what it amounted to, anyhow. Consequently I joined the 27th Invasion Force.

"So you've got an application in for transfer to the Statistical Services, huh?" Trontar Hytd, my new platoon three-striper, asked when I reported in for duty with the 27th.

"Yes, Sir." I'd learned, along the line, that one should never give up when applying for a transfer—just keep one in the mill.

"Huh, Borr, this new guy likes to work with figures," Trontar Hytd growled at Hweetoral Borr,

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my new squad leader. "Thinks he doesn't want to be a Fighter." Trontar Hytd looked at me questioningly.

I didn't say anything. I'd learned a lot in Basic Fighter Course.

"Figures?" asked Hweetoral Borr. I could see a train of thought had been started in the Hweetoral's mind.

"Yeah, figures," snapped Tronter Hytd. "He likes to count things, Borr. Get it?"

"Guess we need all our ray charges counted, for one thing," suggested Hweetoral Borr. "I get all mixed up with them figures."

"After training hours, of course," Trontar Hytd said.

"Of course, Trontar. And someone's gotta jawbone some kind of report on ammo expenditures every training day. Maybe after the rest of us have sacked in, for instance?"

"Of course. Okay, Hweetoral, I guess you got the idea."

Invasion was almost a relief after that brief bit of refresher training the 27th was going through.

Our General-on-the-way-up had outlined his plan of attack: "Drop'm, hit'm, lift'm and drop'm again." So I dropped, hit the defenders, was lifted to a new center of resistance, and dropped again. I understand it was a standard type of invasion, there's only one way to do simple things.

ONCE in a while, these days, I remember those sadistic and battle-hardened comrades of mine. Hard, gutsy Trontar Hytd stayed on his feet to direct his platoon underground after our Kansas force collapsed, and one of those little fission weapons separated his body parts too widely for even our unsentimentally competent surgeon/replacer to reassemble him. Well, they had a go at the job, but they had to ray down what they created — some primitive regression had set in and the creature was hungry.

And rough and tough Hweetoral Borr incautiously scratched his hairy ear just when one of those rude projectile weapons was firing at him. The slug slipped through that opening the Hweetoral had made in his body armor. With the brain gone — or such brain as Hweetoral Borr possessed — our kindly old surgeon/replacer was foxed again.

Then there were the new germs...

But these things are as nothing to the creative military mind. A swarm of regulations, manuals and directives issue forth from headquarters, and force fields cease to collapse, and fighters keep their body armor on and adjusted. When something like the influenza germ wipes out half a platoon, the wheels turn, a new vaccine is devised, and no more Haldorians die

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from that particular germ. All the individual has to do is to live from one injection to the next (any civilized enemy always dreams up new diseases), move from one enemy strong point to the next, and dream of the day when he can return to his old life. For me it was a dream of returning to that quiet tiny room with its walls lined with the best of Haldorian art — just cheap reproductions, of course — and never again to handle a rayer or to wear armor. Real life, meanwhile, went on.

"Fighter First-Class Ruxt! Take these men and blast that strong point!" That would be the order somewhere in Missouri, or maybe in Mississippi — I never was much good on micro-geography. "Hweetoral Ruxt! Take your squad and clean out that city. New Orleans they call it. Get their formal surrender and make damn sure there are no guerrillas left when the colonel comes through to inspect."

By the time I was Trontar Ruxt the invasion was practically over. As I say, it was the standard thing with one or two countries holding out after all hope was gone — England never did formally surrender, not that it mattered — and our successful General was made a Sub-Marshal of the Haldorian Empire.

A real promotion and a great honor. Much good it did him when he ventured his battle fleet too far into the Slug lines a year later.

With the fighting over — the real fighting, I mean — the ever-efficient Haldorians started moving their troops off Earth to get ready for a new and bigger invasion that the computers had decreed. Only a few troops were to be left behind for occupation and guard stuff.

I had a talk with a fat Assignments Trontar in his plush office.

"You know, Trontar," I said, "I was hoping to see more of this world here, and the rumor is that all of us excess combat types are being shipped to a training world to be shaped into new invasion forces."

"Tough," he said. He should know. He'd requisitioned a mansion complete with servants and everything. He even had a native trained to drive one of their luxuriously inefficient ground vehicles. What a deal! That Trontar had no worries, *his* anti-grav ray was working.

"I HEARD that a man doesn't even need any money if he's stationed down at our headquarters," I said, and I hauled out a handful of Haldorian notes from my pocket. "Guess I wouldn't need this stuff if I was transferred down to our headquarters."

"Who needs money?" he asked. "Guys all the time trying to bribe me, Trontar. You'd be surprised. Sure glad you aren't, though, be-

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cause I do hate to turn anyone in."

I put the money back in my pocket. "Speaking of turning in people," I said casually, "you ever have any trouble with the undercover boys about all this loot you've picked up?" This, I thought, would shake him — and at the same time I marvelled at how I'd changed from a simple, naive statistician to a tough and conniving combat NCO.

He yawned all over his fat face and swung his swivel chair so that he could better admire the picture beside his desk. I recognized the picture as a moderately good reproduction of a Huxtner, a minor painter of our XXVth. "No," the Assignments Trontar said, "it turns out that one of my sept brothers runs the local watch birds. He often drops in here to visit with me. But anything I can do for you, Trontar?"

"No," I said, and I fired at the only possible loophole left, "I'll just leave quietly so you can admire your Huxtner."

He swung back to me with a start. "You recognize a Huxtner? You're the first man I've ever met in the service who ever heard of Huxtner, let alone recognizing one of his masterpieces! Hey, did you know I brought this all the way from home in my hammock roll? And just look at the coloring of that figure there!"

The loophole had been blasted wide open. "You're lucky," I said, and I went on to lie about how I'd lost my own Huxtner prints in the invasion. "No one," I continued, "ever got quite that flesh tint of Huxtner's, did they?"

Huxtner, by the way, is notorious for using a yellow undercoat for his blue flesh colors, unlike every realistic painter before or after who have all used green undercoats — what else? Imagine a chrome-yellow underlaying a blue skin color. All Huxtner's figures look like two-week corpses — but Huxtner enthusiasts are unique.

The Assignments Trontar and I had a nice long chat about Huxtner, at the conclusion of which he insisted on scratching my name from the list of combat-bound men and putting me on a much smaller list of men scheduled for our guard outfit, stationed at the old Terran capital of Washington.

I had an un-Haldorian feeling of having arranged my own life after that incident. That feeling persisted even after I took over one of the guard platoons and discovered that life in a guard outfit is rather similar to Basic Fighter Course.

"Trontar Ruxt! Two men of your platoon have tarnished armor. Get them working on it, and maybe you'd better stay and see that they do it properly."

"Yes, Sir."

One lives and learns. I turned

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the job of supervising the armor cleaning to the Hweetorals of the squads and then I went home to my native woman. Yes, this guard's outfit life was like Fighter Basic Course.

But only for the lower ranks.

III

LIFE wasn't too unendurable in those days. The duties were incredibly dull, of course, but the danger of sudden death had receded, since only a few fanatics still tried to pick off us occupation troops. And this new world of Haldoria's was rich in the things a sensitive and artistic man appreciates: painting, sculpture, music. Then there was this new and [illegible]easing thing of living with a [illegible]

But [illegible]dn't last long.

Soon the[illegible] another planet [illegible]vade and m[illegible] space battle [illegible]th the great enemy. More years cramped living and lurking danger, for in the Empire one was drafted for the duration, and this duration was now some four hundred years old. The most Trontar Ruxt could expect, the very most, was to somehow keep alive for another fifty years and then to retire on a small pension to one of the lesser worlds of the Empire.

"Trontar Ruxt! Your records show that you're a statistician." My commanding officer stared at me suspiciously, for a fighting man, even one on guard duty, distrusts office personnel. And as everyone knows, "Once a fighting man, always a fighting man." I think my C.O.'s last action had been thirty years ago.

"I was a statistician before I got in the service, Sir."

"Well, they're screaming over at headquarters for qualified office personnel, and we have to send them any trained men we have — of any rank."

"It's for Haldor, Sir," I said. By now I knew the correct answer was most often the noncommittal one.

I reported to the Headquarters, 27th Invasion Force. The rumor was that Phase II, Reduction of Inhabitants to Slavery with Shipment to Haldorian Colonies, was about to start. And also, our Planners were supposed to be well into Phase III, Terraforming, already. Terraforming was necessary, of course, to bring the average temperature of earth down to something like the sub-arctic so that we Haldorians could live here in comfort. We lost quite a few fighters during invasion when their cooling systems broke down. Rumor, as always, was dead right; and the Headquarters was a mad rat-race.

The Senior Trontar of the office was delighted to get another body.

"Took your time getting here,

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Ruxt! You guard louts don't know the meaning of time, do you?"

I remained at attention.

"So you're a statistician, are you? Well, we don't need any statisticians now. We just got in a whole squad of them. Can you use a writer, maybe?"

"YES, Sir," I did not remind the Senior Trontar that using a writer was a clerk's job, not a Trontar's, not a combat three-striper's, because the chances were that he knew it, for one thing. And he could easily make me a clerk, for another thing.

"Okay. Now that we understand each other," the Senior Trontar grinned, "or that you understand me, which is all that matters, here's your job." He handed me a stack of scribbled notes, some rolls of speech tape and a couple of cans of visual stuff. "Make up a report in standard format like this example. Consolidate all this stuff into it. This report has to be ready in two days, and it has to be perfect. No misspellings, no erasures, no nothing. Got that?"

"Yes, Sir."

"Yes, Sir," he mimicked. "Haldor only knows why they couldn't send me a few clerks instead of a squad of statisticians and one guard trontar. Do you know what this stuff is that you're going to work up? It's the final report on our invasion here!"

I looked impressed. Strange how you learn, after a while, even the facial expression you are supposed to wear.

"Do you know why this report has to be perfect in format and appearance?" I wouldn't say the Senior Trontar's manner was bullying, quite. Perhaps one could call it hectoring. "Because the Accountant is out in this sector somewhere and we have to be ready for him if he drops in."

This time I didn't have to try to look impressed. The Accountant is the man who passes judgment on the conduct of all military matters — though of course he's not one man, but maybe a dozen of them. Armed with the invaluable weapon of hindsight, he drops in after an invasion is completed. He determines whether the affair has gone according t regulations, or whether there h been carelessness, slackness or wasting of Haldorian resources of men or material. Additionally he monitors civil administration of colonies and federated worlds. There are stories of Generals becoming Fighter Basics and Chief Administrators becoming subclerks after an Accountant's visit.

I GOT the report done, but it took the full two days—mainly because fighting men make such incomplete and erroneous reports while action is going on. I got to

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understand the exasperated concern of office personnel who have to consolidate varied fragments into a coherent whole. And adding to the natural difficulties of the task was the continual presence of the Senior Trontar, and his barbed comments and lurid promises as to what would follow my failure at the work.

But the report was done and sent in to the Adjutant.

It came back covered with scribbled changes, additions, and deletions — and it came back carried by a much disturbed Senior Trontar.

"Who in Haldor do they think I am?" he moaned. "I just handed on to you the figures that they gave me. Me! And threatening me with duty on a space freighter . . . and one into the Slug area at that!"

I thougnt, as I looked at my ruined script, that guard duty wasn't so bad, and that even combat wasn't rough *all* the time.

"See, Trontar," the four-striper said, calling me by my proper rank for the first time, "you did a good job, the Adjutant himself said so. But these figures . . ." he shuddered. "If the Accountant should see these we'd all be for it. Space-freighter duty would be getting off light." The Senior Trontar seemed almost human to me right then.

"I just put down what you gave me," I said.

"Yeah, sure, Ruxt. But I didn't realize, nobody realized, how bad the figures were till they were all together and written up. Look, this report shows that we shouldn't Terraform this planet — that we can't make a nudnick on the slavery proposition — and that maybe we shouldn't have even invaded this inferno at all."

"So what do you want me to do?"

"I'll tell you what you're going to do . . ." The Senior Trontar had regained his normal nasty disposition. "You're going to redo this report. You're going to re-do it starting now, you're going to work on it all night, and you're going to have it on my desk and in perfect shape when I come in in the morning, or, by Haldor, the next thing you write will be your transfer to the space freighter run nearest the Slug Galaxy." The Senior Trontar ran momentarily out of breath. "And," he came back strongly, "you won't be going as no Trontar, neither!"

"It'll be on your desk in the morning, Sir," I said.

Deck hands on the space freighter run were, I'd heard, particularily expendable.

BY the middle of the third watch I had completed a perfect copy of the report complete with attachments, appendices, and supplements. And also by this time I knew from the dif-

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ferences between the original report and this jawboned version that someone had goofed badly in undertaking this invasion, and then had goofed worse in not calling the thing off. Now there was to be considerable covering-up of tracks. The thought suddenly came to me that a guard's trontar named Ruxt knew rather a lot of what had gone on. Following that mildly worrying thought came a notion that perhaps a guard's trontar named Ruxt might be considered by some as just another set of tracks to be covered up. That far-off retirement on a small but steady income became even more unlikely, and the possibilities began to appear of a quick end in the Slug-shattered hulk of a space freighter.

Had the Senior Trontar changed in his attitude towards me, towards the end of the day, perhaps acted as though I were a condemned man? Possibly. And had some of the officers been whispering about me late in the afternoon? Could have been.

Shaken, I wandered down to the mess hall and joined a group of third-watch guards, who were goofing off while their Trontar was checking more distant guard posts.

"It's easy," one of them was telling the others. "All you got to do is to slip some surgeon/replacer a few big notes and he gives you this operation which makes you look like a native. And then you just settle down on Astarte for the rest of your life with the women just begging you to let them support you."

"You mean you'd rather live on some lousy federated world than be a Haldorian in the Invasion Forces?" There was a strong sardonic note in the questioner's voice.

"Man, you ever been on Astarte?" the first man asked incredulously.

"Yeah, but how are you going to be sure that the surgeon/replacer doesn't turn you in?" objected one of the others. "He could take your money, do the operation, and have you picked up. That way he'd have the money and get a medal too."

"I'd get around that," the talky guy said, "I'd just . . ."

At this point he was jabbed in the arm by one of his buddies who had noticed my eavesdropping. The man shut up. All four of them drifted off to their posts.

I WENT reluctantly back to the office. From then till dawn I dreamed up and rehearsed all manner of wild schemes to take me out of this dangerous situation. Or was it all perhaps just imagination? A Haldorian Trontar should never be guilty of an excess of that quality. But I made

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sure when the Senior Trontar sneaked in a bit before the regular opening time, that I was just, apparently, completing the last page of the report. The impression I hoped to convey was that I had spent the entire night in working and worrying.

"It's okay," the Senior Trontar growled after he had studied the completed report. "Guess you can take a couple of days off, Ruxt. I believe in taking care of my men. Say," he asked casually, "I suppose you didn't understand those figures you were working up, did you?"

"No," I said, "I didn't pay any attention to them, they were just something to copy, that's all." I felt confident that I could outfence the Senior Trontar any time at this little game, but what had he and the Adjutant been whispering about before they had come in?

"But you used to be a statistician, didn't you?" He looked at the far corner of the room and smiled slightly. "But you take a couple days off, Ruxt. Maybe we'll find something good for you when you come back." He smiled again. "Don't forget to check out with the Locator before you go, though. We don't want to lose you."

I stumbled home, not even noticing the hate-filled glances my armor and blue skin drew from the natives along the streets. The glances were standard, but this feeling of being doomed was new.

They were going to get me. I felt sure of that, even though my Sike Test Scores had always been as low as any normal's. But how could a Haldorian disappear on this planet? Aside from skin color, there was the need to keep body temperatures at a livable level. The body armor unit was good only for about a week. Find a surgeon/replacer and bribe him to change me to an Earthman? I saw now how ridiculous such an idea was. But was there nothing but to wait passively while the Senior Trontar and the Adjutant, and whoever else did the dirty work, all got together and railroaded me off?

Haldorians, though, never surrender — or so the Mil Prop lad would have us believe. Right from the time you are four years old and you start seeing the legendary founders of Haldoria — Bordt and Smordt — fighting off the fierce six-legged carnivores, you are told never to give up. "Where there's Haldor, there's Hope!" "There's always another stone for the wolves, if you but look." I must confess I'd snickered (way deep inside, naturally) at these exhortations ever since I'd reached the age of thinking, but now all these childhood admonitions came rushing back to give me strength,

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quite as they were intended to do. I found that I could but go down like any Haldorian, fighting to the last.

IV

SO I put on my dress uniform the next day, and made sure that nothing could be deader than the dulled bits, or brighter than the polished ones. A bit of this effort was wasted since I arrived at Headquarters looking something less than sharp. The cooling unit in my armor was acting up a bit; and, also, three Terran city guerillas had tried to ambush me on the way. You take quite a jolt from a land mine, even with armor set on maximum. Some of those people never knew when they were licked. No wonder their Spanglt Resistance Quotient was close to the highest on record.

I got through the three lines of guards and protective force fields all right, checking my rayer here, my armor there — the usual dull procedure. By the time I reached the Admissions Officer I was down to uniform and medals.

"You want to see the Accountant?" the Admissions Officer asked incredulously. "You mean one of his staff! Well, where's your request slip, Trontar?"

"I've come on my own, Sir," I said, "not from my office, so I haven't a request slip."

"Come on your own? What's your unit? Give me your ID card!"

Let's see, I thought, I've abstracted classified material from the files and carried it outside the office, I've broken the chain of command and communication, and, worst of all, I'd tried to see a senior officer without a request slip. Yeah, maybe I'd be lucky to end up as a *live* deckhand on a space freighter.

A bored young Zankor with the rarely-seen balance insignia of the Accountant's Office rose from behind the Admissions Officer.

"I'll take responsibility for this man," he said casually to the A.O. "Follow me, Trontar. I was wondering when you'd turn up."

"Me?"

"Well, someone like you. Though usually it's scared sub-clerks that we drag up. And that reminds me." He turned to another young and equally bored Zankor standing nearby. "Take over, Smit, will you? They're bringing in that sub-clerk who's been writing those anonymous letters. I've reserved the Inquisition Room for a couple of hours for him."

I followed the Zankor as he strode away, wondering as I did if they had more than one Inquisition Room.

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He led me into a small room just off the corridor and motioned me to a chair. "Before you see the Accountant, Trontar," he said, "I'll have to screen what you have. It may be that we won't have to bother the Accountant at all."

THE smooth way the Zankor talked and his friendly manner almost convinced me that we should both put the interests of the Accountant first. But then it occurred to me that a man with the gold knot of a Zankor on his collar wasn't often friendly with a mere Trontar. That thought snapped me out of it and I knew I should only give the minimums.

"I've got documents," I said — "document" is such a lovely strong word, "which prove that the official report on the invasion and occupation of this planet is false." That, I thought, was as minimum as one could get.

"Ah, and have you?" The Zankor still looked bored. "Well, let's see them, Trontar," he said briskly.

The Zankor had that sincere look the upper class always uses when they are about to do you dirt. They blush that heavy shade of blue, almost purple, and they look you straight in the eye, and they quiver a bit as to voice . . . and the next thing you know, you're shafted.

"I'm sorry, Sir," I said, "but what I have is so important that I can give it to the Accountant only."

He stared at me for rather a long moment, pondering, no doubt, the pleasures of witnessing a full-dress military flogging. Then he shrugged and picked up the speaker beside him. He didn't call the Trontar of the Guard to come and take my documents by force. I could tell that even though he spoke in High Haldorian, that harsh language the upper class are so proud of preserving as a relic from the days of the early conquerors. No, he was speaking to a superior — there's never any doubt as to who is on top when people are speaking High Haldorian — and then I caught the emphatic negative connected with the present-day Haldorian phrases meaning Phase II and Phase III, Terraforming. So even though I don't know High Haldorian, and would never be so incautious as to admit it if I did, I knew roughly what had been said.

And I was frantically revising my plans.

"Follow me," the Zankor said, after completing the call. "We'll see the Accountant now, and —" he looked at me sincerely — "you'd better have something very good indeed. You really had, Trontar."

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THE Accountant turned out to be a tall and thin Full Marshal, the first I'd seen. He was dressed in a uniform subtly different from the regulation, and he wore only one tiny ribbon, which I didn't recognize. He had the slightly deeper-blue skin you often see on the upper classes, though this impression may have been due to the green furnishings of the room. It was, in fact, called the Green Room, when the Terrans had used it as one of their regional capitals.

I saluted the Accountant with my best salute, the kind you lift like it was sugar and drop as if it were the other. The Accountant responded with one of those negligent waves that tell you the saluter was a survivor of the best and bloodiest private military school in existence.

"Proceed, Trontar," the Accountant said, leaning back and relaxing as if he didn't have a care in the universe.

I launched into my speech, the one I'd been mentally rehearsing. I told him I knew I was breaking the chain of communication, but that I was doing it for the service and for Haldoria, etc. Any old serviceman knows the routine. I was, as I ran through this speech, just as sincere and just as earnestly interested in the good of Haldoria as any Haldorian combat Trontar could be. But, deep inside me, the old Ameet Ruxt was both marveling at the change in himself and cynically appreciating the performance.

The Accountant interrupted the performance about halfway through. "Yes, yes, Trontar," he said brusquely, "I think we can assume your action is for the good of Haldoria, may the Empire increase and the Emperor live forever. Yes. But you say you have material dealing with the overall report on our invasion and occupation of this planet. You further say this material shows discrepancies in the official report — which you imply you have seen."

"Yes, Sir," I said, and I handed over the several sheets of paper which comprised the old report and the changes of the new. Meanwhile, behind me, the Zankor was invisible but I had not a doubt but that he was there, keeping the regulation distance from me.

These people knew their business.

The Accountant took the collection of papers and compared them with some others he had on his desk. I continued to stand at Full Brace. Once you've been chewed out for slipping into an Ease position without being so ordered, you never forget.

The Accountant laid down the papers, scanned my face, got up and walked to the far end of the

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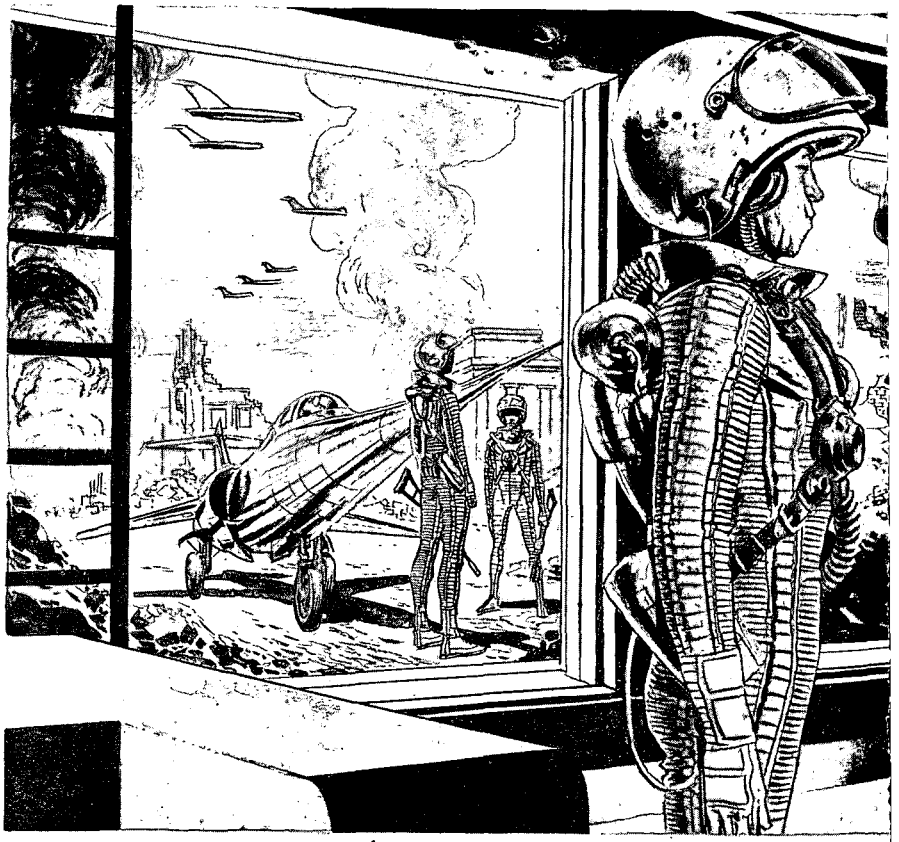

room. In front of a mirror he stopped and fingered that one small ribbon, quite, I thought, as if he were matching it with another one.

He came back quickly and sat down again. "Zankor," he said, "set up a meeting with the top brass for this afternoon. I'll talk with the Trontar privately."

The Zankor saluted and was on his way out the door when the Accountant spoke again. "And Zankor . . ."

"Yes, Sir?"

"I should be very unhappy if the top brass here — the *present* top brass — found out about this material the Trontar brought."

The Zankor swallowed hard

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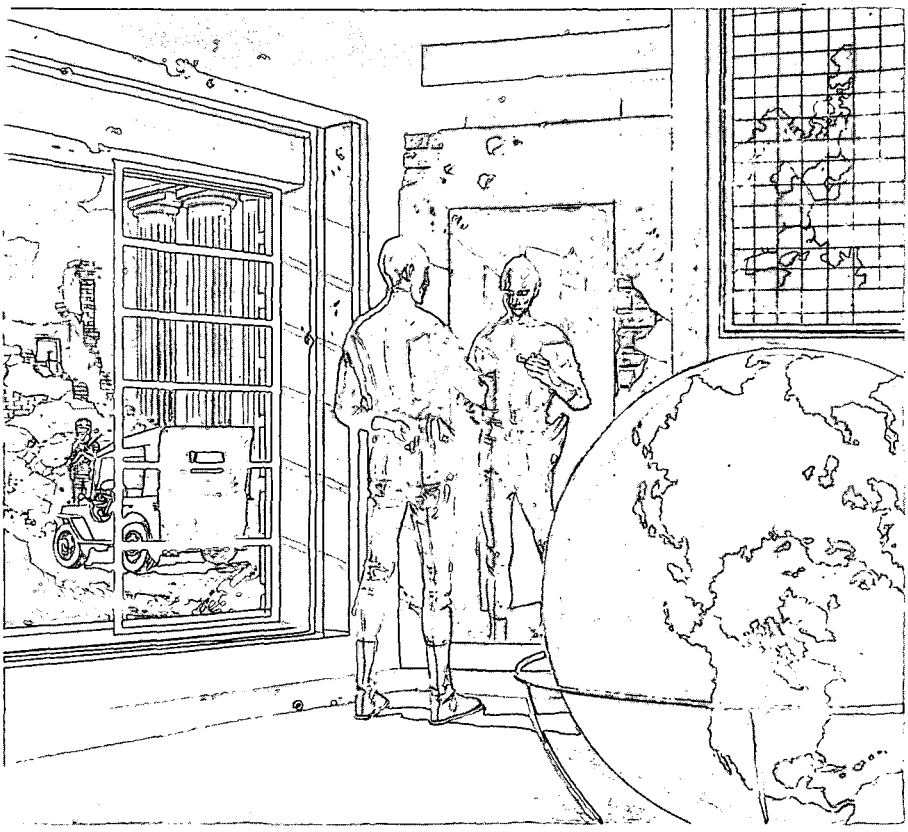

and assured the Accountant that he understood . . ."Sir."

THEN we were alone and the Accountant was suddenly a kindly old man who invited me to sit down and relax. I did. I really let go and stretched out, I forgot everything I'd ever been taught as a child or had learned on my climb to the status of Trontar. I relaxed and he had me.

I had been caught on the standard Haldorian Soft/Hard Tactic.

"Disabuse your mind, Trontar," the Accountant snapped, and he was no longer a kindly old man but a thin-lipped Haldorian snapper, "of any idea that you have

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saved the Empire — or any such nonsense!" Having cracked his verbal whip about my shoulders he just crouched there, glaring at me, his mouth entirely vanished and his eyes — well, I'd just as soon not think about some things.

Yes, and then he gave me the Shout/Silence treatment, the whole thing so masterfully timed that at the end he could have signed me on as a permanent latrine keeper on a spy satellite in the Slug Galaxy. A genius, that man was. The sort of man who could — and probably did — control forty wives without a weapon.

"Your information, as it happens," he said after I had regained my senses, "checks with other data I've received. It might be, of course, that the whole thing is a fabrication of my enemies. In that case, Trontar —" he looked at me earnestly — "you can be assured you'll not be around to rejoice at or to profit from my downfall."

"Of course, Sir," I said, quite as earnestly as he.

"But we both know that you are only a genuine patriot," he said with a hearty chuckle, a chuckle exactly like that of a Father Goodness — that kindly old godfather who brings such nice presents to every Haldorian child until they are six, and who on that last exciting visit brings, and enthusiastically uses, a bundle of large and heavy whips to demonstrate that no one can be trusted. Efficient teachers, the Haldorians.

"Just a genuine patriot," the Accountant repeated, "who has rendered a considerable service to the Empire. Trontar," he said, all friendly and intimate, "the Empire likes to reward well its faithful sons. What would you most like to have or to do?"

"To serve Haldoria, Sir!" I was back on my mental feet at last.

He dropped his act then. He was, I think, just practicing anyway. We had a short talk then, the kind in which one person is quickly and efficiently pumped of everything he knows. After about ten minutes of question and answers, the Accountant leaned back and studied my face carefully.

"Have you considered Officers' Selection Course, Trontar? I might be able to help you a little in getting in."

Officers' Selection Course was, I knew, Fighter Basic Course multiplied in length and casualties. Less than 20 per cent graduate . . . or escape.

"NO, Sir," I said. "I wondered if I mightn't be of more value to Haldoria in some way other than being in the combat services." So now I'd said, it and there was nothing to do but to go on. "Perhaps," I ventured, "I might

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be of some help in the administrative services."

The Accountant said nothing, his face was immobile, his hands still. He'd learned his lessons well, once.

"In fact," I said, deciding to go for broke, "with my knowledge of the language and the customs here, I might be of most service to Haldoria right here on this planet."

"Had you guessed, by any chance, Trontar," the Accountant's voice was neutrally soft, "that we won't be terraforming this world? And that we may not even exploit the slavery proposition?"

"I thought both those possibilities likely," I admitted.

"But you know that in such a case we would have no administrative services on this world? Thus you are, in fact, asking for a position that wouldn't exist." The Accountant, without a change of position of expression, somehow gave the impression of looming over me.

"I thought," I said, trying to pick exactly the right words, and at the same time all too conscious of a twitching muscle in my left eyelid, "that there might be an analogous position, even so."

The Accountant loomed higher.

"If only," he said, "you hadn't come to us, Trontar. I mean that you, in effect, sold your associates out to me. And I hold that once a seller, always a seller. If I could be certain that you are and will be perfectly loyal to the Haldorian Way . . ."

I managed to quiet the twitching eyelid and to look perfectly loyal to the Haldorian Way.

"Yes, Trontar," the Accountant said decisively, "I'll buy it."

THE results of my conference with the Accountant were not long in appearing.

The Haldorian troops were called in, along with the military governors and the whole administrative body, and they all shipped out, somewhere into the Big Out-There they all love so much. A surprised Earth was informed that she was now a full-fledged and self-governing member of the Haldorian Empire. The Terrans were not informed of the economic factors behind this decision, though it might have been cheering for them to know that their Spanglt Resistance Quotient indicated they would make unsatisfactory slaves. Nor did the high cost of terraforming the planet get mentioned. We Haldorians prefer the gratitude of others towards us to be unalloyed with baser, or calculating, emotions.

Not all the Haldorian personnel went out to fight or to administer. I understand the space-freighter run to the battle fleet in the Slug

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Galaxy gained many new deckhands, among them one whose uniform showed the marks where Trontar's stripes had perched.

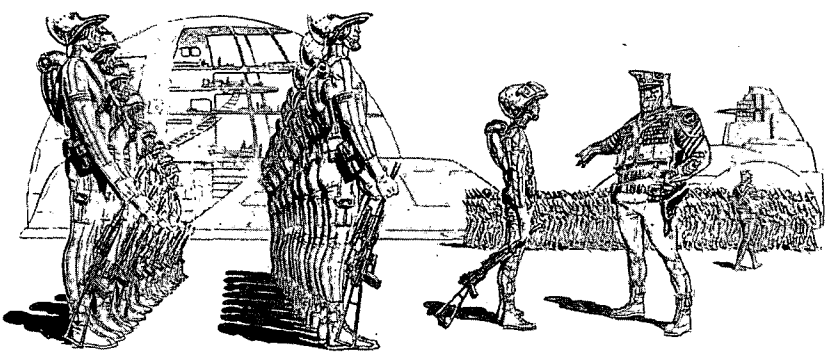
As for myself?

Well, a relatively minor operation changed me into a black-skinned Terran, though the surgeon/replacers could do nothing, ironically enough in view of my new color, to increase my resistance to heat. I remember those stirring days of combat sometimes, usually when I am making my semi-annual flight between Churchill, Manitoba, and Tierra Del Fuego. In fact, during those flights when I am practically alone is the only time I have to reflect or remember, because on both of my estates there is nothing but noise, children, and wives.

But it's a good life when the snow is driving down out of a low gray overcast, just like it does back on Haldor. It's a good life being Resident Trader on Terra, especially when one is, on the side, a trusted agent of the Accountant. It would be a perfect life — if the Accountant hadn't been right about people being unable to stop selling out.

Right now I'm up to my neck in this Terran conspiracy to revolt against the very light bonds Haldoria left on this planet. But how could I resist the tempting offer the Terrans made me? The long sought-for good life, it now occurs to me, isn't so much in escaping from something, but in knowing when to stop. But that I know. I'm drawing the line right now. I'll just tell that agent of the Slug Galaxy that I have no intention of selling out both this solar system *and* Haldoria!

— EARL GOODALE



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Condition of Employment

By CLIFFORD D. SIMAK

This was one time when there had to be — just had to be — a way to keep a good man down!

Illustrated by MACK

HE had been dreaming of home, and when he came awake, he held his eyes tight shut in a desperate effort not to lose the dream. He kept some of it, but it was blurred and faint and lacked the sharp distinction and the color of the dream. He could tell it to himself, he knew just how it was, he could recall it as a lost and far-off thing and place, but it was not there as it had been in the dream.

But even so, he held his eyes tight shut, for now that he was awake, he knew what they'd open on, and he shrank from the drabness and the coldness of the room in which he lay. It was, he thought, not alone the drabness and the cold, but also the loneliness and the sense of not belonging. So long as he did

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not look at it, he need not accept this harsh reality, although he felt himself on the fringe of it, and it was reaching for him, reaching through the color and the warmth and friendliness of this other place he tried to keep in mind.

At last it was impossible. The fabric of the held-onto dream became too thin and fragile to ward off the moment of reality, and he let his eyes come open.

It was every bit as bad as he remembered it. It was drab and cold and harsh, and there was the maddening alienness waiting for him, crouching in the corner. He tensed himself against it, trying to work up his courage, hardening himself to arise and face it for another day.

The plaster of the ceiling was cracked and had flaked away in great ugly blotches. The paint on the wall was peeling and dark stains ran down it from the times the rain leaked in. And there was the smell, the musty human smell that had been caged in the room too long.

Staring at the ceiling, he tried to see the sky. There had been a time when he could have seen it through this or any ceiling. For the sky had belonged to him, the sky and the wild, dark space beyond it. But now he'd lost them. They were his no longer.

A few marks in a book, he thought, an entry in the record. That was all that was needed to smash a man's career, to crush his hope forever and to keep him trapped and exiled on a planet that was not his own.

He sat up and swung his feet over the edge of the bed, hunting for the trousers he'd left on the floor. He found and pulled them on and scuffed into his shoes and stood up in the room.

THE room was small and mean —and cheap. There would come a day when he could not afford a room even as cheap as this. His cash was running out, and when the last of it was gone, he would have to get some job, any kind of job. Perhaps he should have gotten one before he began to run so short. But he had shied away from it. For settling down to work would be an admission that he was defeated, that he had given up his hope of going home again.

He had been a fool, he told himself, for ever going into space. Let him just get back to Mars and no one could ever get him off it. He'd go back to the ranch and stay there as his father had wanted him to do. He'd marry Ellen and settle down, and other fools could fly the death-traps around the Solar System.

Glamor, he thought — it was the glamor that sucked in the kids when they were young and starry-eyed. The glamor of the far place,

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of the wilderness of space, of the white eyes of the stars watching in that wilderness — the glamor of the engine-song and of the chill white metal knifing through the blackness and the loneliness of the emptiness, and the few cubic feet of courage and defiance that thumbed its nose at that emptiness.

But there was no glamor. There was brutal work and everlasting watchfulness and awful sickness, the terrible fear that listened for the stutter in the drive, for the *ping* against the metal hide, for any one of the thousand things that could happen out in space.

He picked up his wallet off the bedside table and put it in his pocket and went out into the hall and down the rickety stairs to the crumbling, lopsided porch outside.

And the greenness waited for him, the unrelenting, bilious green of Earth. It was a thing to gag at, to steel oneself against, an indecent and abhorrent color for anyone to look at. The grass was green and all the plants and every single tree. There was no place outdoors and few indoors where one could escape from it, and when one looked at it too long, it seemed to pulse and tremble with a hidden life.

The greenness, and the brightness of the sun, and the sapping heat — these were things of Earth that it was hard to bear. The light one could get away from, and the heat one could somehow ride along with — but the green was always there.

He went down the steps, fumbling in his pocket for a cigarette. He found a crumpled package and in it one crumpled cigarette. He put it between his lips and threw the pack away and stood at the gate, trying to make up his mind.

BUT it was a gesture only, this hardening of his mind, for he knew what he would do. There was nothing else to do. He'd done it day after day for more weeks than he cared to count, and he'd do it again today and tomorrow and tomorrow, until his cash ran out.

And after that, he wondered, what?

Get a job and try to strike a bargain with his situation? Try to save against the day when he could buy passage back to Mars — for they'd surely let him ride the ships even if they wouldn't let him run them. But, he told himself, he'd figured that one out. It would take twenty years to save enough, and he had no twenty years.

He lit the cigarette and went tramping down the street, and even through the cigarette, he could smell the hated green.

Ten blocks later, he reached the far edge of the spaceport. There was a ship. He stood for a moment looking at it before he went into the shabby restaurant to buy himself some breakfast.

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There was a ship, he thought, and that was a hopeful sign. Some days there weren't any, some days three or four. But there was a ship today and it might be the one.

One day, he told himself, he'd surely find the ship out there that would take him home — a ship with a captain so desperate for an engineer that he would overlook the entry in the book.

But even as he thought it, he knew it for a lie — a lie he told himself each day. Perhaps to justify his coming here each day to check at the hiring hall, a lie to keep his hope alive, to keep his courage up. A lie that made it even barely possible to face the bleak, warm room and the green of Earth.

He went into the restaurant and sat down on a stool.

The waitress came to take his order. "Cakes again?" she asked.

He nodded. Pancakes were cheap and filling and he had to make his money last.

"You'll find a ship today," said the waitress. "I have a feeling you will."

"Perhaps I will," he said, without believing it.

"I know just how you feel," the waitress told him. "I know how awful it can be. I was homesick once myself, the first time I left home. I thought I would die."

He didn't answer, for he felt it would not have been dignified to answer. Although why he should now lay claim to dignity, he could not imagine.

But this, in any case, was more than simple homesickness. It was planetsickness, culturesickness, a cutting off of all he'd known and wanted.

SITTING, waiting for the cakes to cook, he caught the dream again — the dream of red hills rolling far into the land, of the cold, dry air soft against the skin, of the splendor of the stars at twilight and the faery yellow of the distant sandstorm. And the low house crouched against the land, with the old gray-haired man sitting stiffly in a chair upon the porch that faced toward the sunset.

The waitress brought the cakes.

The day would come, he told himself, when he could afford no longer this self-pity he carried. He knew it for what it was and he should get rid of it. And yet it was a thing he lived with — even more than that, it had become a way of life. It was his comfort and his shield, the driving force that kept him trudging on each day.

He finished the cakes and paid for them.

"Good luck," said the waitress, with a smile.

"Thank you," he said.

He tramped down the road, with the gravel crunching underfoot and the sun like a blast upon his back, but he had left the greenness. The

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port lay bare and bald, scalped and cauterized.

He reached where he was going and went up to the desk.

"You again," said the union agent.

"Anything for Mars?"

"Not a thing. No, wait a minute. There was a man in here not too long ago."

The agent got up from the desk and went to the door. Then he stepped outside the door and began to shout at someone.

A few minutes later, he was back. Behind him came a lumbering and irate individual. He had a cap upon his head that said CAPTAIN in greasy, torn letters, but aside from that he was distinctly out of uniform.

"Here's the man," the agent told the captain. "Name of Anson Cooper. Engineer first class, but his record's not too good."

"Damn the record!" bawled the captain. He said to Cooper: "Do you know Morrisons?"

"I was raised with them," said Cooper. It was not the truth, but he knew he could get by.

"They're good engines," said the captain, "but cranky and demanding. You'll have to baby them. You'll have to sleep with them. And if you don't watch them close, they'll up and break your back."

"I know how to handle them," said Cooper.

"My engineer ran out on me." The captain spat on the floor to show his contempt for runaway engineers. "He wasn't man enough."

"I'm man enough," Cooper declared.

AND he knew, standing there, what it would be like. But there was no other choice. If he wanted to get back to Mars, he had to take the Morrisons.

"O.K., then, come on with you," the captain said.

"Wait a minute," said the union agent. "You can't rush off a man like this. You have to give him time to pick up his duffle."

"I haven't any to pick up," Cooper said, thinking of the few pitiful belongings back in the boarding house. "Or none that matters."

"You understand," the agent said to the captain, "that the union cannot vouch for a man with a record such as his."

"To hell with that," said the captain. "Just so he can run the engines. That's all I ask."

The ship stood far out in the field. She had not been much to start with and she had not improved with age. Just the job of riding on a craft like that would be high torture, without the worry of nursing Morrisons.

"She'll hang together, no fear," said the captain. "She's got a lot more trips left in her than you'd think. It beats all hell what a tub like that can take."

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Just one more trip, thought Cooper. Just so she gets me to Mars. Then she can fall apart, for all I care.

"She's beautiful," he said, and meant it.

He walked up to one of the great landing fins and laid a hand upon it. It was solid metal, with all the paint peeled off it, with tiny pits of corrosion speckling its surface and with a hint of cold, as if it might not as yet have shed all the touch of space.

And this was it, he thought. After all the weeks of waiting, here finally was the thing of steel and engineering that would take him home again.

He walked back to where the captain stood.

"Let's get on with it," he said. "I'll want to look the engines over."

"They're all right," said captain.

"That may be so. I still want to run a check on them."

He had expected the engines to be bad, but not as bad as they turned out to be. If the ship had not been much to look at, the Morrisons were worse.

"They'll need some work," he said. "We can't lift with them, the shape they're in."

The captain raved and swore. "We have to blast by dawn, damn it! This is a goddam emergency."

"You'll lift by dawn," snapped Cooper. "Just leave me alone."

He drove his gang to work, and he worked himself, for fourteen solid hours, without a wink of sleep, without a bite to eat.

Then he crossed his fingers and told the captain he was ready.

They got out of atmosphere with the engines holding together. Cooper uncrossed the fingers and sighed with deep relief. Now all he had to do was keep them running.

THE captain called him forward and brought out a bottle. "You did better, Mr. Cooper, than I thought you would."

Cooper shook his head. "We aren't there yet, Captain. We've a long way still to go."

"Mr. Cooper," said the captain, "you know what we are carrying? You got any idea at all?"

Cooper shook his head.

"Medicines," the captain told him. "There's an epidemic out there. We were the only ship anywhere near ready for takeoff. So we were requisitioned."

"It would have been much better if we could have overhauled the engines."

"We didn't have the time. Every minute counts."

Cooper drank the liquor, stupid with a tiredness that cut clear to the bone. "Epidemic, you say. What kind?"

"Sand fever," said the captain. "You've heard of it, perhaps."

Cooper felt the chill of deadly fear creep along his body. "I've

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heard of it." He finished off the whisky and stood up. "I have to get back, sir. I have to watch those engines."

"We're counting on you, Mr. Cooper. You have to get us through."

He went back to the engine room and slumped into a chair, listening to the engine-song that beat throughout the ship.

He had to keep them going. There was no question of it now, if there'd even been a question. For now it was not the simple matter of getting home again, but of getting needed drugs to the old home planet.

"I promise you," he said, talking to himself. "I promise you we'll get there."

He drove the engine crew and he drove himself, day after dying day, while the howling of the tubes and the thunder of the haywire Morrisons racked a man almost beyond endurance.

There was no such thing as sleep — only catnaps caught as one could catch them. There were no such things as meals, only food gulped on the run. And there was work, and worse than work were the watching and the waiting, the shoulders tensed against the stutter or the sudden screech of metal that would spell disaster.

Why, he wondered dully, did a man ever go to space? Why should one deliberately choose a job like this? Here in the engine room, with its cranky motors, it might be worse than elsewhere in the ship. But that didn't mean it wasn't bad. For throughout the ship stretched tension and discomfort and, above all, the dead, black fear of space itself, of what space could do to a ship and the men within it.

IN some of the bigger, newer ships, conditions might be better, but not a great deal better. They still tranquilized the passengers and colonists who went out to the other planets — tranquilized them to quiet the worries, to make them more insensitive to discomfort, to prevent their breaking into panic.

But a crew you could not tranquilize. A crew must be wide-awake, with all its faculties intact. A crew had to sit and take it.

Perhaps the time would come when the ships were big enough, when the engines and the drives would be perfected, when Man had lost some of his fear of the emptiness of space — then it would be easier.

But the time might be far off. It was almost two hundred years now since his family had gone out, among the first colonists, to Mars.

If it were not that he was going home, he told himself, it would be beyond all tolerance and endurance. He could almost smell the cold, dry air of home — even in this

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place that reeked with other smells. He could look beyond the metal skin of the ship in which he rode and across the long dark miles and see the gentle sunset on the redness of the hills.

And in this he had an advantage over all the others. For without going home, he could not have stood it.

The days wore on and the engines held and the hope built up within him. And finally hope gave way to triumph.

And then came the day when the ship went mushing down through the thin, cold atmosphere and came in to a landing.

He reached out and pulled a switch and the engines rumbled to a halt. Silence came into the tortured steel that still was numb with noise.

He stood beside the engines, deafened by the silence, frightened by this alien thing that never made a sound.

He walked along the engines, with his hand sliding on their metal, stroking them as he would pet an animal, astonished and slightly angry at himself for finding in himself a queer, distorted quality of affection for them.

But why not? They had brought him home. He had nursed and pampered them, he had cursed them and watched over them, he had slept with them, and they had brought him home.

And that was more, he admitted to himself, then he had ever thought they would do.

HE found that he was alone. The crew had gone swarming up the ladder as soon as he had pulled the switch. And now it was time that he himself was going.

But he stood there for a moment, in that silent room, as he gave the place one final visual check. Everything was all right. There was nothing to be done.

He turned and climbed the ladder slowly, heading for the port.

He found the captain standing in the port, and out beyond the port stretched the redness of the land.

"All the rest have gone except the purser," said the captain. "I thought you'd soon be up. You did a fine job with the engines, Mr. Cooper. I'm glad you shipped with us."

"It's my last run," Cooper said, staring out at the redness of the hills. "Now I settle down."

"That's strange," said the captain. "I take it you're a Mars man."

"I am. And I never should have left."

The captain stared at him and said again: "That's strange."

"Nothing strange," said Cooper. "I—"

"It's my last run, too," the captain broke in. "There'll be a new commander to take her back to Earth."

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"In that case," Cooper offered, "I'll stand you a drink as soon as we get down."

"I'll take you up on that. First we'll get our shots."

They climbed down the ladder and walked across the field toward the spaceport buildings. Trucks went whining past them, heading for the ship, to pick up the unloaded cargo.

And now it was all coming back to Cooper, the way he had dreamed it in that shabby room on Earth — the exhilarating taste of the thinner, colder air, the step that was springier because of the lesser gravity, the swift and clean elation of the uncluttered, brave red land beneath a weaker sun.

Inside, the doctor waited for them in his tiny office.

"Sorry, gentlemen," he said, "but you know the regulations."

"I don't like it," said the captain, "but I suppose it does make sense."

They sat down in the chairs and rolled up their sleeves.

"Hang on," the doctor told them. "It gives you quite a jolt."

It did.

And it had before, thought Cooper, every time before. He should be used to it by now.

He sat weakly in the chair, waiting for the weakness and the shock to pass, and he saw the doctor, there behind his desk, watching them and waiting for them to come around to normal.

"Was it a rough trip?" the doctor finally asked.

"They all are rough," the captain replied curtly.

Cooper shook his head. "This one was the worst I've ever known. Those engines . . ."

THE captain said: "I'm sorry, Cooper. This time it was the truth. We were *really* carrying medicine. There *is* an epidemic. Mine was the only ship. I'd planned an overhaul, but we couldn't wait."

Cooper nodded. "I remember now," he said.

He stood up weakly and stared out the window at the cold, the alien, the forbidding land of Mars.

"I never could have made it," he said flatly, "if I'd not been psychoed."

He turned back to the doctor. "Will there ever be a time?"

The doctor nodded. "Some day, certainly. When the ships are better. When the race is more conditioned to space travel."

"But this homesickness business — it gets downright brutal."

"It's the only way," the doctor declared. "We'd not have any spacemen if they weren't always going home."

"That's right," the captain said. "No man, myself included, could face that kind of beating unless it was for something more than money."

Cooper looked out the window

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at the Martian sandscape and shivered. Of all the God-forsaken places he had ever seen!

He was a fool to be in space, he told himself, with a wife like Doris and two kids back home. He could hardly wait to see them.

And he knew the symptoms. He was getting homesick once again — but this time it was for Earth.

The doctor was taking a bottle out of his desk and pouring generous drinks into glasses for all three of them.

"Have a shot of this," he said, "and let's forget about it."

"As if we could remember," said Cooper, laughing suddenly.

"After all," the captain said, far too cheerfully, "we have to see it in the right perspective. It's nothing more than a condition of employment."

— CLIFFORD D. SIMAK

FORECAST

The next issue solves a vital problem that we have spent all this while trying to work out: how to get a novel of such freshness, ingenuity, suspense — and stature — that it could bridge the gap between issues. To solve that problem, Frederik Pohl has out-Pohled himself, a big deal indeed for one who has given us *Gravy Planet* and other such great *Galaxy* book-length serials.

In DRUNKARD'S WALK — a tipsy title, but a sure-footed story — the main character is plagued by a terrifying, utterly baffling assassin. Night after night, the assassin stalks him and will not rest until he is dead. A commonplace predicament in fiction, of course. But in this case, it is not the man being stalked who must be dead. It is the assassin! Nor is this simply an O. Henry switcheroo — the hard, cold, completely logical reasons will sweep you through the two installments of this compelling story.

Along with this big half of a true, honest-Injun, fair-dinkum, so-help-us book-length novel — *not* a "shortened version" — we've managed to cram in at least two novelets.

TRANSSTAR, by Raymond E. Banks, is the story of the war that no one dares fight — and the man whose duty lies in preventing that war — by forgetting where his duty stops!

A name new to our pages is William W. Stuart, but it won't be new for long. You'll agree when you read his brilliant novelet, INSIDE JOHN BARTH. Barth has always dreamed of seeing a Garden of Eden — and discovers that he would rather see than be one!

Short stories? Of course. Edgar Pangborn for sure, after too long an absence since his magnificent *Angel's Egg* and *The Music Master of Babylon,* plus others, as many as we can fit in — along with Willy Ley's always enjoyable column and our regular features.

A fine issue. Don't skip it.

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The Airy Servitor

By MARGARET ST. CLAIR

Anyone should be free to take an impossible stand — except that is where the nuse man does business!

Illustrated by WOOD

THE clerk in the utility office looked at Denham silently. It was a look which, to Denham, seemed haughty, insolent and supercilious — qualities he was ready by now to discern in the whole utility company.

"If you dispute the amount of the bill, sir," the clerk said, "you should deposit the sum in question

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with the Utilities Commission while they examine your claim."

"Listen," Denham said, fumbling in his pockets, "all I'm asking is that you send the meter reader out again." He pulled out a handful of receipted bills. "Look at these. Electricity in June, $7.45. In July, $8.32. In August, $3.30 — that was because Franny and I were on vacation. In September, $7.91. And then in October you send in a bill for $875! It's not reasonable!"

The clerk opened the book on the desk in front of him and pointed at a page. "Section five, paragraph 10, sub-section 13," he said woodenly. "'In case of disputed bills, customers must deposit the amount in dispute with the—'"

"I tell you, it's some blasted mistake! Somebody's mislocated the decimal point! Where am I to get $875 to deposit? If you'd send me a bill for $8,750, or $87,500, would you still expect me to deposit it with the Utilities Commission?"

"'—must deposit the amount in dispute with an impartial authority, in this case the Utilities Commission,'" he continued imperturbably. "'Pending settlement of the disputed claim, such deposits are to draw interest at the rate of 2.2% per annum. In case—'"

"All right!" Denham yelled. Two people who had been talking to other clerks at the desk started and turned around to look at him. "All right!" He had completely lost the slender hold he had been keeping on his temper, and he no longer cared. "Send your blasted mechanic around and have the blasted meter taken out!"

AGAIN the clerk looked at him. It was, Denham was pleased to observe, a look quite different in quality from the ones he had previously bestowed. It held respect, admiration, awe. "You mean you want us to have the electricity shut *off?* Why, sir, nobody ever does that!"

"Well, I do!" Denham said.

"But — but — how will you get along without it?"

"That's my problem," Denham answered. "I'd rather do without power the rest of my life than deposit $875 with the Utilities Commission."

"Very well, sir." The clerk's lips curved in a faint smile. "Now, if you'll just sign this form . . ."

Outside in the street again, Denham felt the beginning of a qualm. Of course he and Franny would get along all right without power, the way people used to do. The pioneers hadn't had electric refrigerators. All the same, it might be rather a nuisance. There was the Halloween dinner they were giving for the in-laws on Saturday.

The thing to do was to buy a couple of oil lamps, and a little kerosene stove for Franny to cook on. (But what about the food in the refrigerator, and the hot water sup-

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ply?) Oil lamps wouldn't be so bad for a Halloween party — appropriate, in a way, to the spirit of the occasion.

But if Mrs. Murgatroyd found out that he'd had the power shut off deliberately, she'd decide that it was just another proof of the way he mistreated her daughter. Denham was well aware that his mother-in-law considered him a heartless, inconsiderate brute. Franny might tell her mother as often as she pleased that she loved her husband and was happy with him: Mrs. Murgatroyd would sigh, close her eyes, shake her head, and murmur, "My poor little girl!" It was a remark that by now almost maddened Denham. He would go to nearly any length to avoid hearing it. For a moment he wondered whether it wouldn't be wiser to go back to the power company's office and ask to have the power turned on again.

A man stepped out from a doorway and stood in Denham's path. He was a tall, thin man with eyebrows which arched high on his forehead and then swooped down suddenly to the bridge of his nose, and his cheeks were sunken and pale. There was something indefinably odd about his clothing. It looked, Denham thought, as if it had been made from a picture by a tailor who had never seen a suit of clothes.

"Heigh, gesell," he said in a harsh, hoarse voice. "Would you be interested in some nuse?"

"What?" Denham said, confused.

"Nuse. The airy servitor. Omniscient, omnipotent, invisible. Like Prospero's Ariel. 'I come / To answer thy best pleasure; be't to fly, / To swim, to dive into the fire, to ride / On the curl'd clouds. To thy strong bidding task / Ariel and all his quality.' *The Tempest*, scene 2, act 1. By Francis Bacon. Don't think, use nuse."

"The Tempest?" Denham responded blankly.

THIS sudden excursion into culture from one whom he had expected to offer him smuggled Alaskan sealskins, just off the boat and dirt cheap, bewildered Denham. "What're you talking about?"

"Nuse. I said it was like Prospero's Ariel. Don't they teach you people Bacon in school these days? But never mind that, ges — I mean, sir. That little argument with the power company — you're going to find it pretty tough getting along without electricity, you know. Why don't you try nuse?"

"You mean you're selling bootlegged power from some fly-by-night company?" Denham asked suspiciously.

The stranger hesitated. Then he appeared to make up his mind. "I can see you're an intelligent man, ge — sir" he said. "As a matter of fact, I represent the Inter-Era

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Trading and Exchange Corporation. We specialize in selling products of the future to the present day. Nuse is the most popular of them. Why don't you give us a trial? I'm sure you'd be more than satisfied."

"Uh—"

"We get our nuse direct from the producer, in 3,000 A.D., and retail it to the present. Like all our items, it's top quality. We'd have to arrange a special installation, since today's abode is somewhat more complicated than when I come from, but I can promise you an adequate supply of nuse within thirty minutes after you sign the authorization. All fixed before your wife gets home." He got a little dark-green box out of his waist pocket and showed it to Denham. "This is the plant."

Denham touched it gingerly. It felt warm and the surface was resilient. "Yes, but what is it? Some kind of power?"

"More than power. Much, much more. As to what it is—well, wasn't there a period when your scientists were uncertain as to the nature of electricity? We're in much the same position with regard to nuse. All we know is that it is a trans-dimensional neural force. We get it, as I say, from the far side of 3,000 A.D., but our scientists can only speculate on how it actually originates."

"You mean that if I let you put that gadget in my apartment, the appliances would still work?" Denham asked, grasping at straws. "Even though the electricity is off?"

"Certainly. Much better than ever before. And more than appliances. Having nuse in an abode is like having a dozen super-efficient servants working for you. Omnipotent, omniscient, invisible. Don't think, use nuse."

"Well . . ." Denham said.

AS Denham stopped by at the novelty store on his way home, to pick up the favors and Halloween cut-outs Franny had asked him to get, he decided against telling her about the contract he had signed for nuse. It was perfectly straightforward and businesslike, of course, but he had a feeling she might not care for the idea of having her electric toaster worked by a trans-dimensional neural force that originated on the far side of 3,000 A.D.

He was relieved to find the apartment brightly lighted when he opened the door. That meant, or ought to mean, that the nuse man had been around and the nuse was already on the job. Invisible, omnipotent, omniscient. Don't think, use nuse.

"Hi, baby," he greeted his wife. "Have a good day? Anything new?" He noticed she was wearing a faint frown.

"Not much," she answered, "only something sort of funny happened,

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Gus. That strawberry mousse you like — I decided to make some for supper, and I got all the things for it out of the refrigerator. Then I decided I'd better comb my hair in case you got home ahead of time. And when I went back to the kitchen, there the mousse was in the refrigerator, already mixed and everything. The dishes were washed and put away, too. And I don't remember a single thing about doing it. Oh, Gus, do you suppose there's anything wrong with my mind?"

Denham gulped. Apparently the nuse wasn't going to confine itself to small-time stuff like operating electric toasters and washing machines.

He comforted his wife by telling her that highly intelligent people not infrequently had these lapses, and then, while she was putting supper on the table, wandered out into the hall. After some searching he located the small green box the nuse man had showed him. It was low down by the kitchen door. No wires went into or came out of it. For the second time that day Denham touched it with his fingertips. This time it was definitely cold.

The strawberry mousse, for the record, reached a new height of deliciousness.

Denham's shower next morning was perfect, not, as usual, scalding one minute and freezing the next. And when he went into the bedroom to dress, he found his brown suit laid out neatly on the bed waiting for him. Memoranda and papers had been transferred into the appropriate pockets. His shoes, too, were neatly shined.

There was no use asking Franny whether she had done it — she was busy getting dressed herself, and he knew she had not. It must be the nuse.

WHEN Denham got home that night, he found Franny sitting on the living room floor in tears. Her suitcase was in front of her and various items of her trousseau lay on the rug around her.

"I'm losing my mind," she quavered when she saw him. "Ever since I came home I've been doing things and forgetting about having done them. It's terrible. I'm g-going to pack up and g-go home to Mother. It's not f-f-fair to you."

"No, you're not," Denham answered grimly. He sat down on the floor beside her and told her what had happened.

Franny took his disclosure with remarkable calm. "Oh, is that it? Why didn't you tell me? Say, listen, though — it isn't costing us an awful lot, is it?"

"Only four fifty a month," Denham answered.

Franny's expression grew pleased. "We paid more than that for electricity and it didn't do lots of things this new stuff does. Gus,

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you know what I am planning to do?"

"What?" Denham asked.

"I'm going to have it clean up the whole place tomorrow, new shelf paper in the kitchen, windows, floors waxed, everything, and when Mother says, my, but I must get tired working so hard, I'm going to tell her you've insisted that I have a maid. Then I'm going to have it try a lot of those dishes in the Wine Cook Book you got me — the ones I never made because they s[illegible]ded too complicated — and when she mentions those, I'll tell her the maid did that too. And then I'll have the nuse give me a facial and a manicure and set my hair a new way. I get so tired of the way Mother talks about you all the time. Oh, Gus! Isn't this lots of fun?"

"Um," Denham said, starting to worry because his wife was accepting nuse with so much enthusiasm.

His mood of depression persisted all next day. Part of it, no doubt, could be accounted for by the unattractive prospect of an evening with his in-laws, but there remained a residue of depression which Denham later was to ascribe to sheer prescience. If the nuse man had been around, he would have expressed it, probably, by quoting Francis Bacon's immortal *Romeo and Juliet*: "Oh, God, I have an ill-divining soul!"

DENHAM (he had to work on Saturdays) got home and the apartment was shining like a new penny, romantic aromas of herbs and wine filled the air, and Franny herself was resplendent in an odd but attractive hair-do.

"How'd it go?" he asked her.

"Oh, wonderful! At first I thought it would make me nervous to be waited on by something I couldn't see, but it does it so quick, just like thinking, that I don't have time to get scared. And it's awfully impersonal.

"A funny thing happened, though, Gus. After I got the stuff out of the refrigerator for the gateau with sherry and cream filling, I got to thinking I'd have to watch my weight with all this rich food. Then I decided to taste the dessert to see if it was all right. Would you believe it? The nuse wouldn't let me taste it! It was just as though there was a wall between me and the gateau. It made me cross for a minute, but of course the nuse was right — it's those little tastes that put the fat on."

"H'm," Denham said uneasily.

"Mother called up to say she's bringing Aunt Agatha," she said, watching him warily.

"Aunt Agatha!" Denham's jaw dropped in alarm. Mrs. Murgatroyd's sister was deceptively mild-looking, but every bit as tough and mean as Mrs. Murgatroyd, and her footwork was a lot faster.

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"Oh, Gus, don't look at me like that. She won't hurt you. I've been thinking, and I'm sure the reason she and Mother don't like you better is that they don't know you well. If they were in closer contact with you, they'd realize how nice you really are. That's why I'm putting you between them tonight."

There was a lengthy pause. "O.K.," Denham said at last.

The guests arrived at seven thirty-five. Mrs. Murgatroyd, Aunt Agatha, Mr. Murgatroyd (Denham liked his father-in-law whenever he remembered him), and Bert, Denham's thirteen-year-old brother-in-law — Denham catalogued them miserably while he forced his reluctant face into a genial smile. He felt even more pessimistic and apprehensive than before.

"'Lo, Gussie," Bert said. He was wearing a cotton T shirt with "Bat Man" written in large black letters across the chest. Under the words was the silhouette of a nasty-looking bat. To the lapel of his jacket was pinned an improbably red rose. "What do you think of my flower?"

"Fine," Denham answered. The only good quality he had ever been able to discern in Bert was that the boy was a little too old to chew bubble gum. "Very pretty."

"Go on, smell it."

URGED, Denham bent. He was rewarded by a douche of cold water in the face. "Did you bite!" Bert said with deep satisfaction, "Jeepers, did you bite!"

"Now, Bert," Mrs. Murgatroyd said, and then to Denham, in what might have been apology, "Bert's sense of humor is so keen."

Denham went into the bathroom and dried his collar and his hair. Then he came back and handed around glasses of tomato juice. His own contained something different. He tasted it cautiously and then with enthusiasm. Why had he been so apprehensive? They certainly understood how to mix drinks in 3,000 A.D. Good old — yes, decidedly — good old nuse! He had been longing for a drink, and here it was.

The dinner, with the nuse unobtrusively helping Franny serve, went off well. Even Mrs. Murgatroyd, who had plainly been skeptical about Franny's maid, grew mellow by the time the diners reached the gateau, and Denham, whose glass had been replenished several times, felt himself upborne on a monumental euphoria. For a small sum, say two or three hundred dollars, he would have risked kissing his mother-in-law.

His self-confidence sagged abruptly at Franny's next remark. "Gus, honey," she said, "you go get the things out of the refrigerator, and we'll play that game — you know, the one I read about in the party book. I'm sure Dad and Bert will enjoy playing it."

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Though Denham rose obediently, he was feeling sick. He disliked Mrs. Murgatroyd and the nuse knew it; in the darkness, passing her bits of saturated sponge, chunks of suet, oysters limp and wet, who knew what dreadful thing might happen to her? He'd have to watch his thoughts, watch his thoughts.

When he came back from the kitchen, the room was dark. He gave the parcel to Franny, sitting at the end of the table, and she began the narration.

"There was an old witch who lived in a cellar," she said impressively, "and she did terrible things. On Halloween I went to visit her, though they told me she was dead. I tripped over something on the floor and picked it up." Franny fumbled in the parcel. She lowered her voice. "I knew at once that it was a piece of her arm."

Fanny passed the piece of lamb shank to Bert, who yipped. From Bert it went to Aunt Agatha, to Denham, to Mrs. Murgatroyd. There followed the witch's teeth, tongue, stomach, and brain. The eyeballs, Denham thought apprehensively, would be the worst. Raw oysters in the dark — ugh. What had possessed Franny to try this stunt, anyhow? She was a doll, but she could exhibit an unbelievable lack of tact.

The eyeballs were not the worst. Before Denham even handed the oysters to Mrs. Murgatroyd, she screamed piercingly. "Worms! Worms! You've filled my lap with worms!"

IT was a shriek as demoralizing as a siren's. Denham jumped. The lights came on. Mrs. Murgatroyd glared at him. There was nothing in her lap.

"You did it!" she said fiercely to Denham. "You put worms in my lap. They wriggled horribly. And then you took them away again. You — you — oh, poor Franny, married to a man like you!"

Denham had bitten his tongue so deeply at Mrs. Murgatroyd's first shriek that he could hardly talk, and besides he was conscious of a deep bewilderment. *Worms?*

Franny cut across the hubbub. "For goodness' sake, mother, be quiet! Gus didn't do anything. It was just your imagination. Gus, go get the apples and the tub. We'll try another game."

Mrs. Murgatroyd and her sister — wisely, Denham thought — refused to bob for the apples floating in the tub. He would have liked to refuse himself, but Franny nodded at him commandingly. Dumbly, still nursing his bitten tongue, he took his place behind Bert.

Mr. Murgatroyd was first. He hesitated, calculated, and then plunged. To his son-in-law's surprise, he came up with a pippin firmly between his false teeth. "Nothin' to it," he said.

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Franny was next. She got wet, she screeched. But on the third try she secured an apple. She smiled at Denham and bit into it.

Then Bert. Denham was conscious of keeping a rigid mental grip on himself. It occurred to him suddenly that he had misinterpreted the meaning of the slogan, "Don't think, use nuse." It didn't mean, as one might suppose, that using nuse would relieve one of wear and tear on the brain; it meant something much less agreeable — don't *think*, if you use nuse.

Bert's narrow back bent over the basin. There was a horrid feeling of tension and oppression in the atmosphere. Abruptly he dipped after an apple which floated near the edge.

The water in the basin seemed to recoil from him. Then with a mighty splash it descended on Bert. Two of the apples hit him on the head.

This time it took much longer to get Mrs. Murgatroyd calmed down. "You did it," she repeated bitterly to Denham. "I saw you with my own eyes." Denham couldn't think of a thing to say that would make any sense.

MRS. MURGATROYD gestured toward Bert, who stood between them dripping vehemently. He was wet in the same thoroughgoing fashion that a long-haired dog gets wet; Denham had never seen a human being drip so hard.

"Do you mean to tell me he did *that* by himself?" she demanded. "And look at those big bumps on his poor head! To think that a grown man could be so petty, so childish! Just because he played a harmless, boyish prank on you with his flower! This has opened my eyes, as if they needed opening, to the sort of man you are. Franny's infatuated with you, of course; I only hope that this will help her to realize your true character."

Denham writhed helplessly. He honestly didn't think it was his fault. He hadn't been thinking about anything. Over Mrs. Murgatroyd's head he looked at the others. Mr. Murgatroyd, his fingers laced together over his stomach, was looking up at the ceiling. Aunt Agatha, on the other hand, watched the scene detachedly, while a faint smile played over her lips. Franny's expression was shocked and incredulous.

After a moment Denham caught his wife's eyes. She raised her brows in a gesture of mute questioning. Passionately he shook his head, and was relieved to get a sickly grin from her in return. At least she realized he hadn't meant to do whatever the nuse had done.

Bert was led off to the bedroom and returned, somewhat drier, wearing Denham's new silk dressing gown. As he passed his host,

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Bert stuck out his tongue and thumbed his nose at him. Mrs. Murgatroyd, seeing her son still damp, began to talk all over again.

"For heaven's sakes, Mother," Franny said, "a little water won't hurt Bert. Gus! Will you get the donkey out of the closet? We'll play another game."

Denham drew his wife aside. "Listen, honey," he said earnestly, "do you think it's safe? We've had quite a lot of trouble already, and if we get blindfolded and try to pin tails on that thing . . . Wouldn't it be better just to sit quietly and talk or watch TV?"

Franny looked miserable. "I know, Gus. I feel just as worried about it as you do. Something must have gone wrong with the nuse power source in the future. But if we don't play a game or something, Mother won't go home or anything — she'll just stay here and complain. I think you'd better go get the donkey game."

Denham for some reason was selected to try the tail-pinning first. He made a fool of himself by missing the donkey completely and attaching the tails to the plaster of the wall. He was unblindfolded to the accompaniment of Bert's malignantly triumphant howls.

AFTER Denham, Franny. She did fairly well. Mr. Murgatroyd, to everyone's surprise but his own, got two out of three tails in the proper place. He retired to his chair with an air of modest competence.

Mrs. Murgatroyd must have been stung by her spouse's unexpected success. At any rate she insisted on being blindfolded next, despite Franny's obvious disinclination. Denham watched the process like a man who, tied helpless on top of a powder keg, sees the approach of matches and gasoline.

His mother-in-law groped her way over to the wall. The first tail she pinned to the donkey's chest, the second to the nape of its neck. The third she attached to the right hind leg. Nothing else happened. Denham sagged back, almost sick with relief. Whatever had gone wrong with the nuse source in 3,000 A.D. must have been corrected again.

"The plaster feels a little soft, Frances," Mrs. Murgatroyd said as she surrendered the blindfold to Aunt Agatha. "Perhaps your husband—" she gave Denham a glance of pure cyanide—"could repair it some time."

"Oh, I will," Denham babbled. "Yes, certainly. Of course. Oh, yes, you bet." He got out his handkerchief and wiped the sweat from his brow. When it was perfectly safe to do so, he decided, he'd have the nuse bring him another drink.

Aunt Agatha passed her hand gropingly over the printed figure of the donkey. "The plaster does

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feel a little soft, Kate," she said to Mrs. Murgatroyd. She turned back to her task. "Yes, a little spongy and soft. Why, what on Earth—oh!"

The wall had begun to fall down on her.

First the wall, then the ceiling. Plaster fell in hunks, in chunks, in slabs. Some of it fell on Aunt Agatha, the rest on Mrs. Murgatroyd. Denham, though standing near them, was not touched. The falling plaster would have been noisy in itself, but it was accompanied by a grinding, rending, crashing roar like a cyclone breaking into a lion cage.

The floor began to tremble. From the fireplace beside Denham, an andiron rose into the air and hurled itself at Mrs. Murgatroyd's midriff. An ornamental plate rose dizzily from the dinner table. Twice it smacked itself forcefully against Mrs. Murgatroyd's broad rear; then it flew over to Aunt Agatha and hit her in the face. One of the pair of silver candlesticks from the mantel brandished itself before the nose of Denham's mother-in-law as if held in an angry hand. The other plummeted down deliberately on Aunt Agatha's toes. Franny was screaming at the top of her lungs. It was as if a covey of demented poltergeists was holding a convention in the room.

Articles of futuristic construction, apparently materialized by the nuse on its own hook, rained past Denham's head. Mrs. Murgatroyd was on her knees in the corner; Aunt Agatha was doubled up, with her arms raised to protect her head. Neither of them, since Aunt Agatha's first astonished exclamation, had uttered a sound, and this silence, in sharp contrast with Franny's uninhibited shrieks, impressed Denham as profoundly unnatural.

SUDDENLY the maniacal activity suspended itself. Objects returned to their usual places or fell to the floor. There was an instant of static, frozen calm. Then the carpet tore itself loose from its moorings. With irresistible momentum it advanced on the two cowering women. For a moment it reared above them like a tidal wave; then it broke over their heads.

With this final burst of energy, the nuse seemed to have exhausted itself. The carpet collapsed. After a moment Aunt Agatha pushed its stiff bulk aside and looked out. Her expression was still invincibly mild, but there were bits of plaster in her hair.

Mrs. Murgatroyd wobbled to her feet. Her eyes were fixed on Denham. Her mouth opened and closed several times, but no sound came out. This uncharacteristic aphasia affected him almost more than words would have done. He looked hastily around the room in search of moral support.

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Bert and Franny wore expressions suitable to persons who have just seen a dining room explode. But Mr. Murgatroyd — Denham looked at him with amazement which changed sharply into outraged comprehension — Mr. Murgatroyd was a happy man. Beaming and complacent, his hands clasped over his stomach, he regarded the devastated scene. His eyes lingered on his wife's bruised person with especial pleasure.

So *he* was the cause of everything! No doubt he'd materialized the worms in his wife's lap accidentally, realized that some strange power had obeyed him, and gone on to enjoy it!

"Come, Kate," Aunt Agatha, said, "let us leave this house."

And late as it was when they left, and tired as he was, Denham took a hammer and smashed the nuse.

DENHAM was on his way home from the office one evening in April when the nuse man stepped into his path. He looked leaner and less prosperous than when Denham had seen him half a year before. He had the air, somehow, of a cat which has been chased away from a lot of garbage cans and will undoubtedly be chased away from many more.

"Heigh, gesell," he said hoarsely, "how about buying an ipsissifex? Better even than nuse, the airy servitor. I hear you're working pretty hard these days. Duplicate yourself and cut your work load. We guarantee up to ten perfect replic — heigh, wait! What are you looking at me like that for? Are you going to hit me *too?*"

"I'm afraid I am," Denham said, and he did.

— MARGARET ST. CLAIR

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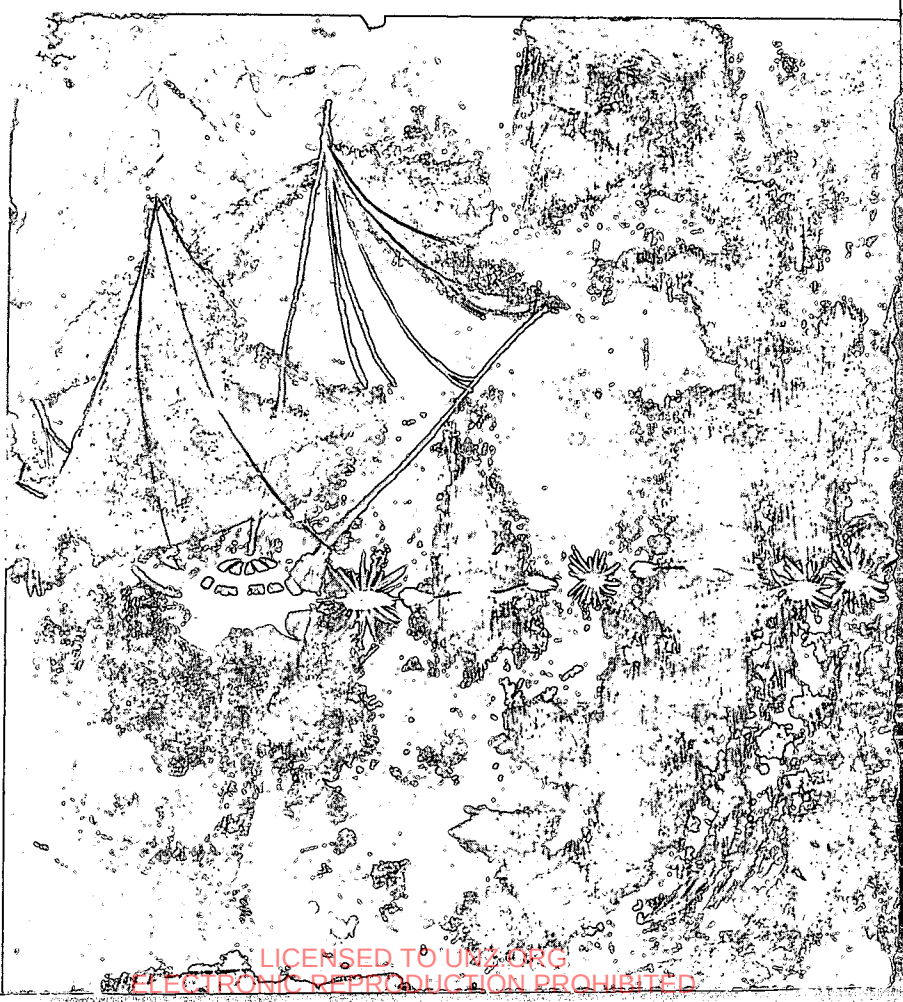
The Lady

No job was ever uglier, nastier or deadlier—

but out of it came a story to inspire generations.

BY CORDWAINER SMITH



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Who Sailed the Soul

Illustrated by DILLON

I

THE story ran—how did the story run? Everyone knew the reference to Helen America and Mr. Gray-no-more, but no one knew exactly how it happened. Their names were welded to the glittering timeless jewelry of romance. Sometimes they were compared to Heloise and Abelard, whose story had been

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found among books in a long-buried library. Other ages were to compare their life with the weird, ugly-lovely story of the Go-Captain Taliano and the Lady Dolores Oh.

Out of it all, two things stood forth — their love and the image of the great sails, tissue-metal wings with which the bodies of people finally fluttered out among the stars.

Mention him and others knew her. Mention her and they knew him. He was the first of the inbound sailors, and she was the lady who sailed the *Soul*.

It was lucky that people lost their pictures. The romantic hero was a very young-looking man, prematurely old and still quite sick when the romance came. And Helen America, she was a freak, but a nice one: a grim, solemn, sad little brunette who had been born amid the laughter of humanity. She was not the tall, confident heroine of the actresses who later played her.

She was, however, a wonderful sailor. That much was true. And with her body and mind she loved Mr. Gray-no-more, showing a devotion which the ages can neither surpass nor forget. History may scrape off the patina of their names and appearances, but even history can do no more than brighten the love of Helen America and Mr. Gray-no-more.

Both of them, one must remember, were sailors.

II

SHE was a child and she was playing with a spieltier. She got tired of letting it be a chicken, so she reversed it into the fur-bearing position. When she extended the ears to the optimum development, the little animal looked odd indeed. A light breeze blew the animal-toy on its side, but the spieltier good-naturedly righted itself and munched contentedly on the carpet.

The little girl suddenly clapped her hands and broke forth with the question, "Mama, what's a sailor?"

"There used to be sailors, darling, a long time ago. They were brave men who took the ships out to the stars, the very first ships that took people away from our sun. And they had big sails. I don't know how it worked, but somehow the light pushed them, and it took them a quarter of a life to make a single one-way trip. People only lived a hundred and sixty years at that time, darling, and it was forty years each way, but we don't need sailors any more."

"Of course not," said the child. "We can go right away. You've taken me to Mars and you've taken me to New Earth too, haven't you, Mama? And we can go anywhere and it only takes one afternoon."

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"That's planoforming, honey. But it was a long time before the people knew how to planoform. And they could not travel the way we could, so they made great big sails. They made sails so big that they could not build them on Earth. They had to hang them out halfway between Earth and Mars. And you know, a funny thing happened . . . Did you ever hear about the time the world froze?"

"No, Mama. What was that story about?"

"Well, a long time ago, one of these sails drifted and people tried to save it because it took a lot of work to build it. But the sail was so large that it got between Earth and the sun. And there was no more sunshine, just night all the time. And it got very cold on Earth. All the atomic power plants were busy, and all the air began to smell funny. And the people were worried and in a few days they pulled the sail back out of the way. And the sunshine came again."

"Mama, were there ever any girl sailors?"

A curious expression crossed over the mother's face. "There was one. You'll hear about her when you are older. Her name was Helen America and she sailed the *Soul* out to the stars. She is the only woman that ever did it. And that is a wonderful story."

The mother dabbled at her eyes with a handkerchief.

The child said: "Mama, tell me now. What's the story all about?"

At this point the mother became very firm and she said: "Honey, there are some things that you are not old enough to hear yet. But when you are a big girl, I'll tell you all about them."

The mother was an honest woman. She reflected a moment, and then she added, "Unless you read about it yourself first."

III

HELEN America was to make her place in the history of mankind, but she started badly. The name itself was a misfortune.

No one ever knew who her father was. The officials agreed to keep the matter quiet.

Her mother was not in doubt. Her mother was the celebrated she-man Mona Muggeridge, a woman who had campaigned a hundred times for the lost cause of complete identity of the two sexes. She had been a feminist beyond all limits, and when Mona Muggeridge, the one and only *Miss* Muggeridge, announced to the press that she was going to have a baby, that was first-class news.

Mona Muggeridge went further. She proclaimed that no woman should have consecutive children with the same man, that women should be advised to pick different fathers for their children, so as to

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diversify and beautify the race. She capped it all by announcing that she, Miss Muggeridge, had selected the perfect father and would inevitably produce the only perfect child.

Miss Muggeridge, a bony, pompous blonde, stated that she would avoid the nonsense of marriage and family names, and that therefore the child, if a boy, would be called John America, and, if a girl, Helen America.

Thus it happened that little Helen America was born with the correspondents in the press services waiting outside the delivery room. News screens flashed the picture of a pretty three-kilogram baby.

That was just the beginning. Mona Muggeridge was belligerent. She insisted, even after the baby had been photographed for the thousandth time, that this was the finest child ever born. She pointed to the child's perfections. She demonstrated all the foolish fondness of a doting mother, but felt that she, the great crusader, had discovered this fondness for the first time.

Helen America was a wonderful example of raw human material triumphing over its tormentors. By the time she was four years old, she spoke six languages, and was beginning to decipher some of the old Martian texts. At the age of five she was sent to school. Her fellow school children immediately invented a rhyme:

"Helen, Helen,
Fat and dumb,
Doesn't know where
Her daddy's from!"

Helen took all this and perhaps it was an accident of genetics that she grew to become a compact little person — a deadly serious little brunette. Challenged by lessons, haunted by publicity, she became careful and reserved about friendships, and desperately lonely.

When Helen America was sixteen, her mother came to a bad end. Mona Muggeridge eloped with a man she announced to be the perfect husband for the perfect marriage hitherto overlooked by mankind. The perfect husband was a skilled machine polisher. He already had a wife and four children. He drank beer and his interest in Miss Muggeridge seems to have been a mixture of good-natured comradeship and a sensible awareness of her motherly bankroll. The planetary yacht on which they eloped broke the regulations with off-schedule flight. The bridegroom's wife and children had alerted police. The result was a collision with a robot barge which left both bodies identifiable.

At sixteen Helen was already famous, and at seventeen already forgotten, and very much alone.

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IV

THIS was the age of sailors. The thousands of photo-reconnaissance and measuring missiles had begun to come back with their harvest from the stars. Planet after planet swam into the ken of mankind. The new worlds became known as the interstellar search missiles brought back photographs, samples of atmosphere, measurements of gravity, cloud coverage, chemical makeup and the like.

Of the very numerous missiles which returned from their two- or three-hundred-year voyages, five brought back reports of New Earth, a planet so much like Terra itself that it could be settled.

The first sailors had gone out almost a hundred years before. They had started with small sails not over two thousand miles square. Gradually the size of the sails increased. The technique of adiabatic packing and the carrying of passengers in individual pods reduced the damage done to the human cargo. It was great news when a sailor returned to Earth, a man born and reared under the light of another star. He was a man who had spent a month of agony and pain, bringing a few sleep-frozen settlers, guiding the immense light-pushed sailing craft which had managed the trip in an objective-time period of forty years.

Mankind got to know the look of a sailor. There was a plantigrade walk to the way he put his whole body on bed, couch or ground. There was a sharp, stiff, mechanical swing to his neck. The man was neither young nor old. He had been awake and conscious for forty years, thanks to the drug which made possible a kind of limited awareness. By the time the psychologists interrogated him, first for the proper authorities of the Instrumentality and later for the news releases, it was plain enough that he thought the forty years were about a month. He never volunteered to sail back, because he had actually aged forty years. He was a young man, young in his hopes and wishes, but a man who had burned up a quarter of a human lifetime in a single agonizing experience.

At this time Helen America went to Cambridge. Lady Joan's College was the finest woman's college in the Atlantic world. Cambridge had reconstructed its protohistoric traditions, and the neo-British had recaptured that fine edge of engineering which reconnected their traditions with the earliest antiquity.

Naturally enough the language was cosmopolite Earth and not archaic English, but the students were proud to live at a reconstructed university very much as the archeological evidence showed

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it to have been before the period of darkness and troubles came upon the Earth.

Helen shone a little in this renaissance.

NEWS release services watched Helen in the cruelest possible fashion. They revived her name and the story of her mother. She had put in for six professions, and her last choice was sailor. It happened that she was the first woman to make the application — first because she was the only woman young enough to qualify who had also passed the scientific requirements.

Her picture was beside his on the screens before they ever met each other.

Actually, she was not anything like that at all. She had suffered so much in her childhood from *"Helen, Helen, fat and dumb"* that she was competitive only on a coldly professional basis. She hated and loved and missed the mother she had lost, and she resolved so fiercely not to be like her mother that she became an embodied antithesis of Mona.

The mother had been horsy, blonde, big — the kind of woman who is a feminist because she is not very feminine. Helen never thought about her own femininity. She just worried about herself. Her face would have been round if it had been plump, but she was not plump. Black-haired, dark-eyed, small and slim, she was a genetic demonstration of her unknown father. Her teachers often feared her. She was a pale, quiet girl, and she always knew her subject.

Her fellow-students had joked about her for a few weeks and then most of them had banded together against the indecency of the press. When a newsframe came out with something ridiculous about the long-dead Mona, the whisper went through Lady Joan's, "Keep Helen away. Those people are at it again."

They protected her, and it was only by chance that she saw her own face in a newsframe. There was the face of a man beside her. He looked like a little old monkey, she thought. Then she read, "PERFECT GIRL WANTS TO BE A SAILOR. SHOULD SAILOR HIMSELF DATE PERFECT GIRL?" Her cheeks burned with old helpless embarrassment and rage, but she had grown too expert at being herself to do what she might have done in her teens—hate the man. She knew it wasn't his fault either. It wasn't even the fault of the news services. She had only to be herself, if she could ever find out what that really meant.

THEIR dates, when they came, had the properties of a nightmare. A news service notified Helen that she had been awarded a week's holiday in New Madrid—with the sailor from the stars.

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Helen refused.

Then *he* refused too, and he was a little too prompt for her liking. She became curious about him.

Two weeks passed, and in the office of the news service a treasurer brought two slips of paper to the director. They were the vouchers for Helen America and Mr. Gray-no-more to obtain the utmost in preferential luxury at New Madrid.

The treasurer said, "These have been issued and registered as gifts with the Instrumentality, sir. Should they be canceled?"

The executive of the news service had his fill of stories that day, and he felt humane. On an impulse he commanded the treasurer, "Give those tickets to them again. No publicity. We'll keep out of it. If they don't want us, they don't have to have us. Push it along. That's all. Go."

The tickets went back out to Helen. She had made the highest record ever reported at the university and she needed a rest. When the news service woman gave her the ticket, she said, "Is this a trick?"

Assured that it was not, she then asked, "Is that man coming?"

She couldn't say "*the* sailor"—it sounded too much like the way people had always talked about herself — and she honestly didn't remember his other name at the moment.

The woman did not know.

"Do I have to see him?" said Helen.

"No," said the woman. "The gift is unconditional."

Helen laughed, almost grimly. "All right, I'll take it and say thanks. But one picturemaker — mind you, just one — and I walk out. Or I may walk out for no reason at all. Is that all right?"

It was.

Four days later Helen was in the pleasure world of New Madrid, and a master of the dances was presenting her to an odd, intense old man whose hair was black.

"Junior Scientist Helen America — Sailor of the Stars Mr. Gray-no-more."

He looked at them shrewdly and smiled a kindly, experienced smile. He added the empty phrase of his profession, "I have had the honor and I withdraw."

They were alone together on the edge of the dining room. The sailor looked at her very sharply indeed and then said, "Who are you? Are you somebody I have already met? Should I remember you? There are too many people here on Earth. What do we do next? What are we supposed to do? Would you like to sit down?"

Helen said one "Yes" to all those questions and never dreamed that the single *yes* would be articulated by hundreds of great actresses, each one in the actress's own spe-

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cial way, across the centuries to come.

They did sit down.

How the rest of it happened, neither one was ever quite sure.

SHE had had to quiet him almost as though he were a hurt person in the House of Recovery. She explained the dishes to him, and when he still could not choose, she gave the robot selections for him. She warned him, kindly enough, about manners when he forgot the simple ceremony of eating which everyone knows, such as standing up to unfold the napkin or putting the scraps into the solvent tray and the silverware into the transfer.

At last he relaxed and did not look so old.

Momentarily forgetting the thousand times she had been asked silly questions herself, she asked him, "Why did *you* become a sailor?"

He stared at her in open-eyed inquiry, as though she had spoken to him in an unknown language and expected a reply. Finally he mumbled the answer, "Are you — you, too — saying that — that I shouldn't have done it?"

Her hand went to her mouth in instant apology. "No, no, no. You see, I myself have put in to be a sailor."

He looked at her, his young-old eyes open wide. He did not stare, but merely seemed to be trying to understand words, each one of which he could comprehend individually but which in sum amounted to sheer madness. She did not turn away from his look, odd though it was. Once again, she had the chance to note the indescribable peculiarity of this man who had managed enormous sails out in the blind, empty black between untwinkling stars.

He was young as a boy. The hair which gave him his name was glossy black. His beard must have been removed permanently, because his skin was like that of a middle-aged woman — well-kept, pleasant, but showing the unmistakable wrinkles of age and betraying no sign of normal stubble. The skin had age without experience. The muscles had grown older, but they did not show *how* the person had grown.

Helen had learned to be an acute observer of people as her mother took up with one fanatic after another; she knew that people carry their secret biographies written in the muscles of their faces, and that a stranger passing on the street tells us (whether he wishes to or not) all his inmost intimacies. If we but look sharply enough, and in the right light, we know whether fear or hope or amusement has tallied the hours of his days, we divine the sources and outcome of his most secret sensuous pleasures, we catch the

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dim but persistent reflections of those other people who have left the imprints of their personality on him in turn.

All this was absent from Mr. Gray-no-more.

HE had age but not the stigmata of age; he had growth without the normal markings of growth; he had lived without living, in a time and world in which most people stayed young while living too much.

He was the uttermost opposite to her mother that Helen had ever seen, and with a pang of undirected apprehension Helen realized that this man meant a great deal to her future life, whether she wished him to or not. She saw in him a young bachelor, prematurely old, a man whose love had been given to emptiness and horror, not to the tangible rewards and disappointments of human life.

He had had all space for his mistress, and space had used him harshly. Still young, he was old; already old, he was young.

The mixture was one which she knew that she had never seen before, and which she suspected that no one else had ever seen, either. He had in the beginning of life the grief, compassion, and wisdom which most people find only at the end.

It was he who broke the silence. "You did say — didn't you?—that you yourself had put in to be a sailor?"

Even to herself, her answer sounded silly and girlish. "I'm the first woman ever to qualify with the necessary scientific subjects while still young enough to pass the physical . . ."

"You must be an unusual girl," said he mildly.

Helen realized, with a thrill, a sweet and bitterly real hope that this young-old man from the stars had never heard of the "perfect child" who had been laughed at in the moments of being born, the girl who had all America for a father, who was famous and unusual and alone so terribly much so that she could not even imagine being ordinary, happy, decent, or simple.

She thought to herself, *It would take a wise freak who sails in from the stars to overlook who I am,* but to him she simply said, "It's no use talking about being 'unusual.' I'm tired of this Earth and since I don't have to die to leave it, I think I would like to sail to the stars. I've got less to lose than you may think . . ." She was about to tell him about Mona Muggeridge, but she stopped in time.

The compassionate gray eyes were upon her, and at this point it was he, not she, who was in control of the situation. She looked at the eyes themselves. They had stayed open for forty years, in the

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blackness near to pitch darkness of the tiny cabin. The dim dials had shone like blazing suns upon his tired retinas before he was able to turn his eyes away. From time to time he had looked out at the black nothing to see the silhouettes of his dials, almost blackness against total blackness, as the miles of their sweep sucked up the push of light itself and accelerated him and his frozen cargo at almost immeasurable speeds across an ocean of unfathomable silence. Yet what he had done, she had asked to do.

The stare of his gray eyes yielded to a smile of his lips. In that young-old face, masculine in structure and feminine in texture, the smile had a connotation of tremendous kindness. She felt singularly much like weeping when she saw him smile in that particular way at her. Was that what people learned between the stars? To care for other people very much indeed and to spring upon them only to love and not to devour?

IN a measured voice he said, "I believe you. You're the first one that I have believed. All these people have said that they wanted to be sailors too, even when they looked at me. They could not know what it means, but they said it anyhow, and I hated them for saying it. You, though — perhaps you will sail among the stars, but I hope that you will not."

As though waking from a dream, he looked around the luxurious room, with the gilt-and-enamel robot-waiters standing aside with negligent elegance. They were designed to be always present and never obtrusive: This was a difficult esthetic effect to achieve, but their designer had achieved it.

The rest of the evening moved with the inevitability of good music. He went with her to the forever-lonely beach which the architects of New Madrid had built beside the hotel. They talked a little, they looked at each other, and they made love with an affirmative certainty which seemed outside themselves. He was very tender, and he did not realize that in a genetically sophisticated society, he was the first lover she had ever wanted or had ever had. (How could the daughter of Mona Muggeridge want a lover or a mate or child?)

On the next afternoon, she exercised the freedom of her time and asked him to marry her. They had gone back to their private beach, which, through miracles of ultrafine mini-weather adjustment, brought a Polynesian afternoon to the high, chilly plateau of central Spain.

She asked him, *she* did, to marry her, and he had refused, as tenderly and as kindly as a boy of twenty aged sixty can refuse a girl of eighteen. She did not press him; they continued the love affair.

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They sat on the artificial sand of the artificial beach and dabbled their toes in the man-warmed water of the ocean. Then they lay down against an artificial sand dune which hid New Madrid from view.

"Tell me," Helen said, "may I ask again, why did you become a sailor?"

"Not so easily answered," he said. "Adventure, maybe, at least in part. And I wanted to see Earth. Couldn't afford to come in a pod. Now — well, I've enough to keep me the rest of my life. I can go back to New Earth as a passenger in a month instead of forty years—be frozen in no more time than the wink of an eye, put in my adiabatic pod, linked to the next sailing ship, and wake up home again while some other fool does the sailing."

Helen nodded. She did not bother to tell him that she knew all this.

"Out where you sail among the stars," she said, "can you tell me—can you possibly tell me anything of what it's like out there?"

His face looked inward on his soul and afterward his voice came as from an immense distance. "There are moments — or is it weeks? You can't really tell in the sail ship — when it seems — worth while. You feel — your nerve endings reach out until they touch the stars. You feel enormous."

GRADUALLY he came back to her. "It's trite to say, of course, but you're never the same again. I don't mean just the obvious physical thing, but — you find yourself — or maybe you lose yourself. That's why," he continued, gesturing toward New Madrid, out of sight behind the sand dune, "I can't stand this. New Earth — well, it's like Earth must have been in the old days, I guess. There's something fresh about it. Here . . ."

"I know," said Helen America, and she did. The slightly decadent, slightly corrupt, too comfortable air of Earth must have had a stifling effect on the man from beyond the stars.

"There," he said, "you won't believe this, but sometimes the ocean's actually too cold to swim in. We have music that doesn't come from machines, and pleasures that come from inside our own bodies without being put there. I have to get back to New Earth," he said.

Helen said nothing for a little while, concentrating on stilling the pain in her heart. "I — I —" she began.

"I know!" he said, almost savagely turning on her. "But I can't take you! You're too young; you've got a life to live and I've thrown away a quarter of mine. No, that's not right. I didn't throw it away. I wouldn't trade it back because it's given me something inside that

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I never had before. And it's given me you."

"But if—" she started again to argue.

"No. Don't spoil it. I'm going next week to be frozen in my pod to wait the next sail ship. I can't stand much more of this and I might weaken. That would be a terrible mistake. But we have this time together now, and we have our separate lifetimes to remember in. Don't think of anything else. There's nothing else, nothing we can do."

Helen did not tell him — then or ever — of the child they would now never have. She could have tied him to her with it, for he was an honorable man and would have married her, had she told him. But Helen, even then in her youth, wanted him to come to her of his own free will. To that marriage their child would have been an additional blessing.

There was the other alternative, of course. She could have borne the child without naming the father. But she was no Mona Muggeridge. She knew too well the terror and loneliness of being a Helen America ever to be responsible for creating another. And for the course she had laid out, there was no place for a child. So, at the end of their time in New Madrid, she let him say a real good-by. Wordless and without tears, she left.

Then she went up to an arctic city, a pleasure city where such carelessnesses are known to happen, and a confidential medical service eliminated the unborn child. Then she went back to Cambridge and confirmed her place as the first woman to sail a ship to the stars.

V

THE Presiding Lord of the Instrumentality at that time was a man named Waite. Waite was not cruel; he had a job that left no room for anything but efficiency.

His aide said to him, "This girl wants to sail a ship to New Earth. Are you going to let her?"

"Why not?" said Waite. "If she fails, we will find out something eighty years from now, when the ship comes back. Don't give her any convicts, though. Convicts are too valuable as settlers to be sent on a gamble. Give her fanatics. Don't you have twenty or thirty thousand who are waiting?"

"Yes, sir, twenty-six thousand two hundred. Not counting recent additions."

"Very well," said the Lord of the Instrumentality "give her the whole lot of them and assign her that new ship. Have we named it?"

"No, sir," said the aide.

"Name it."

The aide looked blank.

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A contemptuous wise smile crossed the face of the senior bureaucrat. He said, "All right, then—name it the *Soul* — and let the *Soul* fly to the stars. And let Helen America be an angel if she wants to. Poor thing, she hasn't had much of a life on this Earth, not the way she was born and brought up. And it's no use to try and reform her, to transform her personality, when it's a lively, rich personality. It does not do any good. We don't have to punish her for being herself. Let her go. Let her have what she wants."

Waite sat up and stared at his aide and then repeated very firmly: "Let her have what she wants — *but only if she qualifies.*"

VI

HELEN America did qualify. The doctors and the experts tried to warn her against it.

One technician said: "Don't you realize what this is going to mean? Forty years will pour out of your life in a single month. You leave here a girl. You will get there a woman of sixty. There will be about thirty thousand pods strung on sixteen lines behind you, and you will have the control cabin to live in. We will give you as many robots as you need, probably a dozen. You will have a main sail and a foresail and you will have to keep the two of them."

"I know. I have read the book," said Helen America. "And I sail the ship with light, and if the infrared touches that sail, I go. If I get radio interference, I pull the sails in. And if the sails fail, I wait as long as I live."

The technician looked a little cross. "There is no call for you to get tragic about it. Tragedy is easy enough to contrive. And if you want to be tragic, you can do it without destroying thirty thousand other people or wasting a large amount of Earth cargo and shipping. You can drown right here, or jump into a volcano, or get into an accident. Tragedy is not the hard part. The hard part is when you don't quite succeed and you have to keep on fighting. When you must keep going on and on and on in the face of really hopeless odds.

"Now this is the way the foresail works. That sail will be twenty thousand miles at the wide part. It tapers down and the total length will be just under 80,000 miles. It will be retracted or extended by small servo-robots. The servo-robots are radio-controlled. You had better use your radio sparingly, because these batteries have to last forty years. They have got to keep you alive."

"Yes, sir," said Helen America very contritely.

"You've got to remember what your job is. You're going because a sailor takes a lot less weight than

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a machine. There is no all-purpose computer built that weighs as little as you do. You go simply because you are expendable. Anyone who goes out to the stars takes one chance in three of never getting there. But you are not going because you are a leader. You are going because you are young, because you qualify intellectually and academically — because your nerves are good. You understand that?"

"Yes, sir."

"Any questions?"

"No, sir."

"Furthermore, you are going because you'll make the trip in forty years. If we send automatic devices and have them manage the sails, they would get there — possibly. But it would take them a hundred years or more, and by that time the adiabatic pod would have spoiled, most of the human cargo would not be fit for revival, and the leakage of heat would be enough to ruin the entire expedition. So remember that the tragedy and the trouble you face is mostly work. Work, and that's all it is. That is your big job."

Helen smiled. She was a short girl with rich dark hair, brown eyes, and very pronounced eyebrows, but when Helen smiled she looked almost like a child again, and a rather charming one. She said: "My job is work. I understand that, sir."

VII

IN the preparation area, the make-ready was fast but not hurried. Twice the technicians urged her to take a holiday before she reported for final training. She did not accept their advice. She wanted to go forth; she knew that they knew she wanted to leave Earth forever, and she also knew they knew she was not merely her mother's daughter. She was trying, somehow, to be herself. She knew the world did not believe, but the world did not matter.

The third time they suggested a vacation, the suggestion was mandatory. She had a gloomy two months which she ended up enjoying a little bit on the wonderful islands of the Hesperides, islands which were raised when the weight of the earthports caused a new group of small archipelagoes to form below Bermuda.

She reported back, fit, healthy, and ready to go.

The senior medical officer was very blunt. "Do you really know what we are going to do to you? We are going to make you live forty years out of your life in one month."

She nodded, and he went on, "Now to give you those forty years we've got to slow down your bodily processes. After all, the sheer biological task of breathing forty years' worth of air in one month

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involves a factor of about five hundred to one. No lungs could stand it. Your body must circulate water. It must take in food. Most of this is going to be protein. There will be some kind of a hydrate. You'll need vitamins.

"Now, what we are going to do is slow the brain down, very much indeed, so that the brain will be working at about that five-hundred-to-one ratio. We don't want you incapable of working. Somebody has to manage the sails.

"Therefore, if you hesitate or start to think, a thought or two is going to take several weeks. Meanwhile your body can be slowed down some. But the different parts can't be slowed down at the same rate. Water, for example, we brought down to about eighty to one, food to about three hundred to one.

"You won't have time to drink forty years' worth of water. We circulate it, get it through, purify it, and get it back in your system, unless you break your link-up.

"So what you face is a month of being absolutely wide awake, on an operating table *and being operated on without anesthetic*, while doing some of the hardest work that mankind has ever found."

WHITE of face, she nodded again when he paused, and again he continued.

"You'll have to take observations. You'll have to watch your lines with the pods of people and cargo behind you. You'll have to adjust the sails. If there is anybody surviving at your destination point, they will come out and meet you.

"At least that happens most of the times.

"I am not going to assure you you will get the ship in, and if they don't meet you, take an orbit beyond the furthest planet and either let yourself die or try to save yourself. You can't get thirty thousand people down on a planet single-handedly.

"Meanwhile, though, you've got a real job. We are going to have to build these controls right into your body. We'll start by putting valves in your chest arteries. Then we catheterize you. We are going to make an artificial colostomy that will go forward here, just in front of your hip joint. Your water intake has a certain psychological value, so that about one five-hundredth of your water we are going to leave you to drink out of a cup. The rest of it is going to go directly into your blood stream. Again about a tenth of your food will go that way. You understand that?"

"You mean," said Helen, "I eat one-tenth, and the rest goes in intravenously?"

"That's right," said the medical technician. "We will pump it into you. The concentrates are there. The reconstituter is there. Now

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these lines have a double connection. One set of connections runs into the maintenance machine. That will become the logistic support for your body. And these lines are the umbilical cord for a human being alone among the stars. They are your life.

"If they should break or if you should fall, you might faint for a year or two. If that happens, your local system takes over: that's the pack on your back.

"On Earth, it weighs as much as you do. You have already been drilled with the model pack. You know how easy it is to handle in space. That'll keep you going for a subjective period of about two hours. No one has ever worked out a clock yet that would match the human mind, so, instead of giving you a clock, we are giving you an odometer attached to your own pulse and we mark it off in grades. If you watch it in terms of ten-thousands of pulse beats, you may get some information out of it. I don't know what kind of information, but you may find it helpful somehow."

Helen nodded.

He looked at her sharply and then turned back to his tools, picking up a shining needle with a disk on the end.

"Now, let's get back to this. We are going to have to get right into your mind. That is a chemical too."

HELEN interrupted. "You said you were not going to operate on my head."

"Just the needle. That's the only way we can get to the mind. Slow it down enough so that you will have this subjective mind operating at a rate that will make the forty years pass in a month." He smiled grimly, but the grimness changed to momentary tenderness as he took in her brave, obstinate stance, her girlish, admirable, pitiable determination.

"I won't argue it," she said. "This is as bad — and as good — as a marriage, and the stars are my bridegroom." The image of the sailor went across her mind, but she said nothing of him.

The technician went on, "We have already built in psychotic elements. You'll have to be insane to manage the sails and to survive utterly alone and be out there even a month. And the trouble is, in that month you are going to *know* it's really forty years. There is not a mirror in the place, but you'll probably find shiny surfaces to look at yourself.

"You will see yourself aging, every time you slow down to look. I don't know what the problem is going to be on that score. It's been bad enough on men.

"Your hair problem is going to be easier than men's. With the sailors we sent out, we simply had to kill all the hair roots. Other-

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wise the men would have been swamped in their own beards. And a tremendous amount of the nutrient would be wasted if it went into raising of hair on the face. I think what we will do is inhibit hair on the top of your head. Whether it comes out the same color or not is something you will find for yourself later. Did you ever happen to meet the sailor who came in?"

The doctor knew she had. He did not know that it was the sailor from beyond the stars who called her.

Helen managed to remain composed as she smiled at him to say: "Your technician planted a new scalp. The hair came out black and he got the nickname of Mr. Gray-no-more."

"If you are ready next Tuesday, we'll be ready too. Do you think you can possibly make it by then, my lady?"

Helen felt odd seeing this old, serious man refer to her as "lady," but she knew he was paying respect to a profession and not just to an individual.

"Tuesday is time enough." She felt complimented that he was old-fashioned enough to know the ancient names of the days of the week and to use them. That was a sign that he had not only learned the essentials at the university but that he had picked up the elegant inconsequentials as well.

VIII

TWO weeks later was twenty-one years later by the chronometers in the cabin. Helen turned for the ten-thousandth-times-ten-thousand time to scan the sails.

Her back ached with a violent throb.

She could feel the steady roar of her heart like a fast vibrator as it ticked against the time-span of her awareness. She could look down at the meter on her wrist and see the hands on the dials indicate tens of thousands of pulses very slowly.

She heard the steady whistle of air in her throat as her lungs seemed shuddering with sheer speed.

And she felt the throbbing pain of a large tube feeding water directly into her neck.

Her abdomen felt as though someone had built a fire there. The evacuation tube operated automatically, but it burned as if a coal had been held to her skin, and a catheter, which connected her bladder to another tube, stung as savagely as the prod of a scalding-hot needle.

Her head ached and her vision blurred.

But she could still see the instruments and she still could watch the sails. Now and then she could glimpse, faint as a tracery of dust, the immense skein of people and

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cargo that lay behind the sails.

She could not sit down.

The only way that she could be comfortable was to lean against the instrument panel, her lower ribs against the panel, her tired forehead against the meters.

Once she rested that way and realized that it was two and a half months before she got up. She knew that rest had no meaning, and she could see her face moving, a distorted image of her own face growing old in the reflections from the glass face of the "apparent weight" dial. She could look at her arms with blurring vision, note the skin tightening, loosening and tightening again as changes in temperatures affected it.

She looked out one more time at the sails and decided to take in the foresail. Wearily she dragged herself over the control panel with a servo-robot. She selected the right control and opened it for a week or so. She waited there, her heart buzzing, her throat whistling air. Finally she checked to see if the control really had been the right one, pushed again, and nothing happened.

She pushed a third time. There was no response.

Now she went back to the master panel, re-read, checked the light direction, found a certain amount of infra-red pressure which she should have been picking up. The sails had very gradually risen to something not far from the speed of light itself because they moved fast with the one side dulled; the pods behind, sealed against time and eternity, swam obediently in an almost perfect weightlessness.

Her reading had been correct.

The sail *was* wrong.

She went back to the emergency panel and pressed. Nothing happened.

SHE broke out a repair robot and sent it out to effect repairs, punching the papers as rapidly as she could, to give instructions. The robot went out and an instant (three days) later it replied. The panel on the repair robot rang forth, "Does not conform."

She sent a second repair robot. That had no effect either.

She sent a third, the last. Three bright lights. "Does not conform" started at her. She moved the servo-robots to the other side of the sails and pulled hard.

The sail was still not at the right angle.

She stood there wearied and lost in space, and she prayed. She thought she had prayed very fervently and she hoped that she would get an answer to her prayer.

It did not work out that way. She was bewildered, alone.

There was no sun. There was nothing except the tiny cabin and herself, more alone than any woman had ever been before. She

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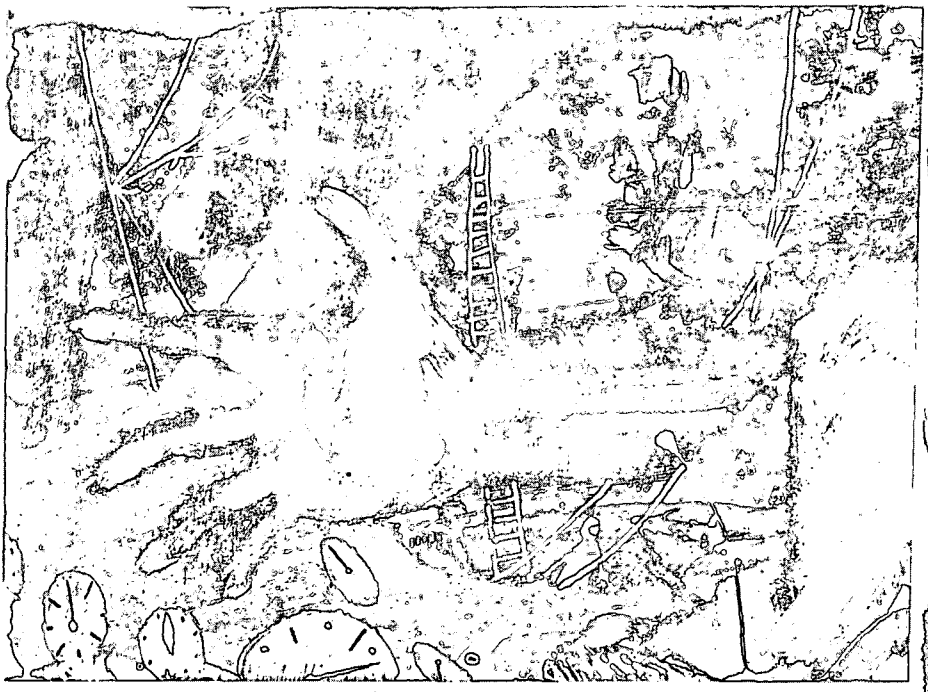

sensed the thrill and ripple of her muscles as they went through days of adjustment while her mind noticed only the matter of minutes. She leaned forward, forced herself not to relax, and finally she remembered that one of the official busybodies had included a weapon.

What she would use a weapon for, she did not know.

It pointed. It had a range of two hundred thousand miles. The target could be selected automatically.

She got down on her knees trailing the abdominal tube and the feeding tube and the catheter tubes and the helmet wires, each one running back to the panel. She crawled underneath the panel for the servo-robots and she pulled out a written manual. She finally found the right frequency for the weapon's controls. She set the weapon up and went to the window.

At the last moment she thought, "Perhaps the fools are going to make me shoot the window out. It

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ought to have been designed to shoot through the window without hurting it. That's the way they *should* have done it."

She wondered about the matter for a week or two.

Just before she fired, she turned. There, next to her, stood her sailor from the stars, Mr. Gray-no-more. He said: "It won't work that way."

He stood clear and handsome, the way she had seen him in New Madrid. He had no tubes, he did not tremble, she could see the normal rise and fall of his chest as he took one breath every hour or so. One part of her mind knew that he was a hallucination. Another part of her mind believed that he was real. She was mad, and she was very happy to be mad at this time, and she let the hallucination give her advice. She re-set the gun so that it would fire through the cabin wall, and it fired a low charge at the repair mechanism out beyond the distorted and immovable sail.

The low charge did the trick.

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The interference had been something beyond all technical anticipation. The weapon had cleaned out the forever-unidentifiable obstruction, leaving the servo-robots free to attack their tasks like a tribe of maddened ants. They worked again. They had had defenses built in against the minor impediments of space. All of them scurried and skipped about.

With a sense of bewilderment close to religion, she perceived the wind of starlight blowing against the immense sails. The sails snapped into position. She got a momentary touch of gravity as she sensed a little weight. The *Soul* was back on her course.

IX

"IT'S a girl," they said to him on New Earth. "It's a girl. She must have been eighteen or twenty when she left Earth."

Mr. Gray-no-more did not believe it.

But he went to the hospital and there in the hospital he saw Helen America.

"Here I am, sailor," said she. "I sailed too." Her face was white as chalk, her expression that of a girl of about twenty, body that of a well-preserved woman of sixty.

As for him, he had not changed again, since he had returned home inside a pod.

His eyes narrowed, and then, in a sudden reversal of roles, it was he who was kneeling beside her bed and covering her hands with his tears.

Half-coherently, he babbled at her: "I ran away from you because I loved you so. I came back here where you would never follow, or if you did follow, you'd still be a young woman, and I'd still be too old. But you sailed here and you wanted me."

The nurse of New Earth did not know about the rules which should be applied to sailors from the stars. Very quietly she went out of the room. But she was a practical woman. She called a friend of hers at the news service and said: "If you get over here fast, you can get the scoop on Helen America and Mr. Gray-no-more. They just met like that and fell in love."

The nurse did not know that they had foresworn a love on Earth. The nurse did not know that Helen America had made a lonely trip with an icy purpose, and the nurse did not know that the crazy image of Mr. Gray-no-more, the sailor himself, had stood beside Helen twenty years out from nothing-at-all in the depth and blackness of space between the stars.

X

THE little girl had grown up, had married, and now had a little girl of her own. The mother

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was unchanged, but the spieltier was very, very old. It had outlived all its marvelous tricks of adaptability, and for some years had stayed frozen in the role of a yellow-haired, blue-eyed girl doll. Out of sentimental sense of the fitness of things, she had dressed the spieltier in a bright blue jumper with matching panties. The little animal crept softly across the floor on its tiny human hands, using its knees for hind feet. The mock-human face looked up blindly and squeaked for milk.

The young mother said, "Mom, you ought to get rid of that thing. It's all used up and it looks horrible with your nice period furniture."

"I thought you loved it," said the older woman.

"It was cute when I was a child, but I'm not a child any more, and it doesn't even work."

The spieltier had struggled to its feet and clutched its mistress's ankle. The older woman took it away gently, and put down a saucer of milk and a cup the size of a thimble. The spieltier tried to courtsey, as it had been motivated to do at the beginning, slipped, fell, and whimpered. The mother righted it and the little old animal-toy began dipping milk with its thimble and sucking the milk into its tiny, toothless old mouth.

"You remember, Mom—" said the younger woman, and stopped.

"Remember what, dear?"

"You told me about Helen America and Mr. Gray-no-more when that was brand-new."

"Yes, darling, maybe I did."

"You didn't tell me everything," said the younger woman accusingly.

"Of course not. You were a child."

"But it was awful. Those messy people, and the horrible way sailors lived. I don't see how you idealized it and called it a romance—"

"But it was. It is."

"Romance, my foot," said the daughter. "It's as bad as you and the worn-out spieltier." She pointed at the tiny, living, aged doll who had fallen asleep beside its milk. "I think it's horrible. You ought to get rid of it. And the worlds ought to get rid of sailors."

"Don't be harsh, darling," said the mother.

"Don't be a sentimental old slob," said the daughter.

"Perhaps we are," said the mother with a little loving sort of laugh.

Unobtrusively, she put the sleeping spieltier on a padded chair where it would not be stepped on or hurt.

— CORDWAINER SMITH

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By JAMES STAMERS

SOLID SOLUTION

Brilliant? A genius? David Adam Smith had the brains of fifty men—very literally!

Illustrated by GRAY

THREE students were expelled for bringing the bubble dancer into the Desert Institute, Lee White, Burns Gilbert and John Thay. The Director did not like any of them. He liked me, Morris. I was his stooge, his squirming straight man. I was useful for his jokes.

"We know calculus is a method of measuring uncircular curves, such as beer barrels . . . but I fear Morris has allowed that thought to absorb him, hig, hig, hig, hig."

That was one of Professor David Adam Smith's favorites. Or:

"If you will visit me this afternoon, Morris, I will give you personal tuition in astrophysics . . . beginning with the more complicated parts of the alphabet, hig, hig, hig."

But he owned the Desert Institute. He was the only living authority on geology, terrestrial or extraplanetary, and there was a waiting list of students . . .

On their last afternoon, I was sent with the disgraced three on a specimen-collecting tour of the desert. It was my routine job but a real disgrace to them. I often thought the only reason David Adam Smith allowed me to stay

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on as a student, apart from offering him a target for sneering at, was because of my muscles. I could handle the long specimen trailer and heave boulders about more easily than the others.

"Do not sneer at Morris, gentlemen. Science tells us brain size is related to surface area. You should expect in Morris a potentially great brain therefore . . . if Morris were not devoted to obstructing science, hig, hig, hig."

The other three, Lee, Burns and John, were about six feet tall, slim, dark haired and handsome. But we were collecting specimens, not running for Miss Earth 2430. My extra seven inches in height extends more or less proportionately in my reach and thickness of shoulder. Anyway, they were depressed at being expelled, so I let them sit in the shade of the trailer while I set up the specimen plates and power unit, minima stand here, maxima stand there, controls on the sand beside them.

"I don't expect you've done this elementary stuff for a couple of years," I said. "So . . . don't walk on the plates and don't touch the dial or the red and blue buttons."

"Hell, Morry, we know."

"Okay, okay. Only it's more tricky than it looks."

THE whole desert belonged to David Adam Smith, which showed his political pull. Who else on Earth was allowed a whole *room* to themselves, even—except maybe the Planetary Salvager, and the heads of the Material Recovery subdivisions and top Government people like that. But David Adam Smith had to have a complete desert. He ruled from the Holiday Probable centers of Reno to the gambling computers of Las Vegas, where the bubble dancer had come from.

I put a single grain of sand on the minima plate and stood clear.

"Press the blue button, Burns."

Burns wasn't even listening.

"Burns," I repeated.

"Hell, Morry, who cares about these damned specimens? How would you like to be expelled? No classification, no chance of a job, spend the rest of your life in a compulsory Holiday Reservation."

"How does he get away with it," muttered Lee, looking around at the open desert and the bare hills on the skyline. "Tomorrow we'll be back in a ten-to-a-room bachelor unit in the Nebraska suburbs, with a fine view of continuous rooftops to the Gulf, the Atlantic and the Great Lakes, and the nearest geological specimen at the bottom of the community hydroponic tanks. And here he is — the only David Adam Smith, the one original — with a desert of his own. It makes me sick."

John Thay shook his head.

"That's just emotional reaction,

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Lee. We were all busting ourselves to be admitted, to be one of the select three hundred. Just because we're being slung out doesn't mean the whole Desert Institute is no good. You know perfectly well why he has the place reserved."

"I know his excuse. I can just see him, flapping his cloak at the Salvagers and croaking, 'I don't care what you want to do with the ground, gentlemen. I must have open spaces to live in. Am I or am I not the only leading scientist of importance who has retained his sanity and continued to produce discoveries of unique value? Where is Firnivale, Williams, Hutk, Marrpole, and so on and so on? Lost. Missing. Probably in a sodden stupor in one of the South American City-States. I tell you, science cannot produce anything in laboratories. Science must have room to breathe!' "

It was a stock student's speech.

I waited for the other two to round it off.

"And why, Professor Smith," said Burns imitating a heavy official voice, "have you alone retained your faculties?"

"Because, dear sir," Lee answered in David Adam Smith's thin voice, "I never admit more than three hundred students to the Institute. And because apparently I have the only mind capable of absorbing the weight of modern knowledge without much strain."

"You do not dislike yourself, Professor."

"I give credit where it is due, dear sir." Lee stopped and continued in his normal voice. "The trouble is, he *does* produce the stuff. He's supposed to be a geologist, but there hasn't been an invention for the last decade that he didn't master-mind."

"Pity he can't think of some way of speeding up the emigration," John said. "If only we could leave Earth!"

I WALKED over and pressed the blue button myself.

The grain of sand on the minima plate flicked out of our time-space and reappeared on the maxima plate ten times larger. I picked it up and carried it back to the minima plate, repeated the process and went on until the grain of quartz was more than four feet long.

"Why don't you do it in one jump instead of walking backwards and forwards?" John Thay asked.

"Can't," I said. "It's got to be a perfect model of the crystal lattice of quartz. If you calibrate it for too big a jump in size it gets distorted. No one knows why."

"You don't tell us, Morry. Hell, the marvel is that it works at all."

I threw the four-foot-long crystal over to John and he put it in the trailer, after nearly losing it on the slight breeze. It is difficult to disbelieve your eyes and remember

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that an overblown specimen has very little more than its original weight. The grain of quartz was merely expanded. Its molecular and nuclear structure stretched out in a magnified volume of space. It was almost all holes, an open arrangement of spaces between the force points of its matter; a direct magnification of the original without any other change.

We used these specimens in the Desert Institute because everyone could see the details of the crystal lattice for themselves, instead of having to use an electron microscope. It removed the practical difficulties of the principle of indeterminacy, David Adam Smith said. If light was too coarse to let him see the contents of a nucleus, he was damned well going to bring the nucleus up to a size where he could see it. And so he did, eventually, with this apparatus.

I was one of the very few students ever allowed to touch the apparatus, probably because he thought I was too dumb to do anything with it. There were several sets but they never left the Institute. The world was not ready for them, he said.

There was quite a lot of stuff that David Adam Smith kept to himself in the Institute. Not because the world was unready, but simply because he didn't think he would get maximum applause at that particular time. He only produced inventions at the right theatrical moment. David Adam Smith was quite a ham.

I was not supposed to tell anyone how this apparatus worked, but the three of them sitting facing me in the shade were not going anywhere after this. I didn't think it mattered. If you are not chosen at birth for emigration within the System, and if you also fail at the Institute or one of the dormitory-universities, you're just an extra unit of overpopulation.

I THOUGHT I'd give them something to think about instead of brooding over the bubble dancer and their expulsion.

"Of course it works," I said. "It's only Einstein with a twist."

The three of them laughed.

"No, really. You know the clocks that go out on every stellar-reporter and come back to the Institute with dope on the composition of this and that place in the Galaxy? You were advanced students, you must have sent them off every day, well, wasn't the clock always slow when it returned?"

"Against the dispatching room clock, of course it was," John agreed. "And if there was enough spare material left on Earth to send people apart from emigrants, a man would be younger than his twin when he returned."

"Well," I said, "that's what happens here, except that a specimen

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goes out off a minima plate and comes back onto the maxima plate so fast that the time component is negligible. All that happens is that it gets moved outside the local space-time reference. It doesn't exactly go anywhere, I suppose. But instead of consuming less time on this shift out and in again, the time stays constant and it reappears occupying more space. And there you are, with a magnified version of the original."

There was a silence.

"Have you ever put anything living on the plate, Morry?"

I blushed. John had a knack of uncovering safely hidden facts.

"Well, I did make a small mistake once. A grasshopper got on the plate when I wasn't looking. I was magnifying an alumino-silicate and a few seconds after I got the specimen up to size, the grasshopper appeared in the middle of it. I had to reverse the specimen back to get it out. Meant picking the crystal off the plate fast, before the insect came through, but I managed it."

"Was it hurt?"

"The grasshopper? No. A little stunned, maybe. But perfectly well."

I went back to the plates and started another quartz grain. John, Lee and Burns sat and gabbled to each other.

"If the crystal lattice was expanded to start with . . ."

"Relative to its size, the crystal would be full of breathing holes . . ."

"You could take in nutrient through a lattice as big as that. It would be relatively porous . . ."

". . . molecular pressure . . ."

". . . shift that battery and move the galvanometer . . ."

". . . take out most of the instruments and fake up the records from the previous trip . . ."

"If we weren't being expelled this evening," said John.

They looked at me.

"Are you sure about the grasshopper, Morry?" Burns asked.

I nodded.

I HAD no warning. I had just put a half-inch expanded grain on the minima plate, when Lee White walked onto the maxima and Burns pressed the red button.

There was a flicker and White appeared, half an inch tall, in the middle of the expanded quartz crystal on the minima plate. He was able to move his arms. He seemed to be saying something that amused him. I knocked Burns away from the controls, pressed the blue button, whisked the empty crystal off the maxima plate as it came through and only just got it out of the way before Lee White reappeared on the maxima plate, his normal size again.

"Well, it works," he said.

"You crazy?" I yelled at him.

"Just think," Burns said, sitting up and holding his jaw. "The num-

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ber of times we've watched this fella pressing his red and blue buttons, and dismissed it as elementary stuff for beginners."

They calmed me down and apologized for doing a thing like that. Hell, I would have been expelled too if I had gone back to the Institute with one of them missing. David Adam Smith had a very elaborate hearing aid, but it never enabled him to hear excuses. Students only on Institute property, no readmittance for expelled students — and certainly no expelled students locked up in a lab specimen.

I suppose they would have thought it funny to sit in a crystal and make faces at David Adam Smith. They were wild, all three of them, and had been since they were admitted. I had no desire to be expelled with them.

"You're not going to be expelled, Morry. Not if you do as we ask."

"And if you don't," Burns said, still rubbing his jaw, "we'll tell the dear Director that you explained how his specimen collector works."

"Then you'll be expelled with us, Morry."

"He's going to get tired of having you around to laugh at one day, Morry. Then you'll be out anyway."

"No use appealing to him with the broad theme, I suppose?"

I look at John Thay.

"What broad theme?" I asked.

"Do you know what you've got here, Morry? You have the only mass escape route from Earth."

"You're euphoricked!"

"No, we're not. Do you know how many habitable planets we've listed? Over three hundred and fifty. We've sent stellar-reporters out and back every day and we know. They're listed back there at the Institute. We can reach them on the hyperspace transmitter, you know that. The only things that stop a mass emigration are David Adam Smith, the small size of the transmitter and the impossibility of building enough ships to carry everyone. The alloy supply only just covers the standard emigration program. But a stellar-reporter comes back with the data, is re-set and goes out again and comes back again. Don't you see, Morry?"

"No," I said, "I don't."

"Look. If you can use the same ship over and over again, the shortage of alloys doesn't matter provided you can build the first ship."

"Okay," I said, "but a stellar-reporter isn't a ship, unless you're a two foot mi[illegible]et and . . ."

I stopped.

If Lee White could get in and out of a crystal safely — and he seemed to be unchanged after having just done so — he could travel inside a stellar reporter with the other delicate mechanisms.

I had never b[illegible]en promoted to those classes, but I knew the stel-

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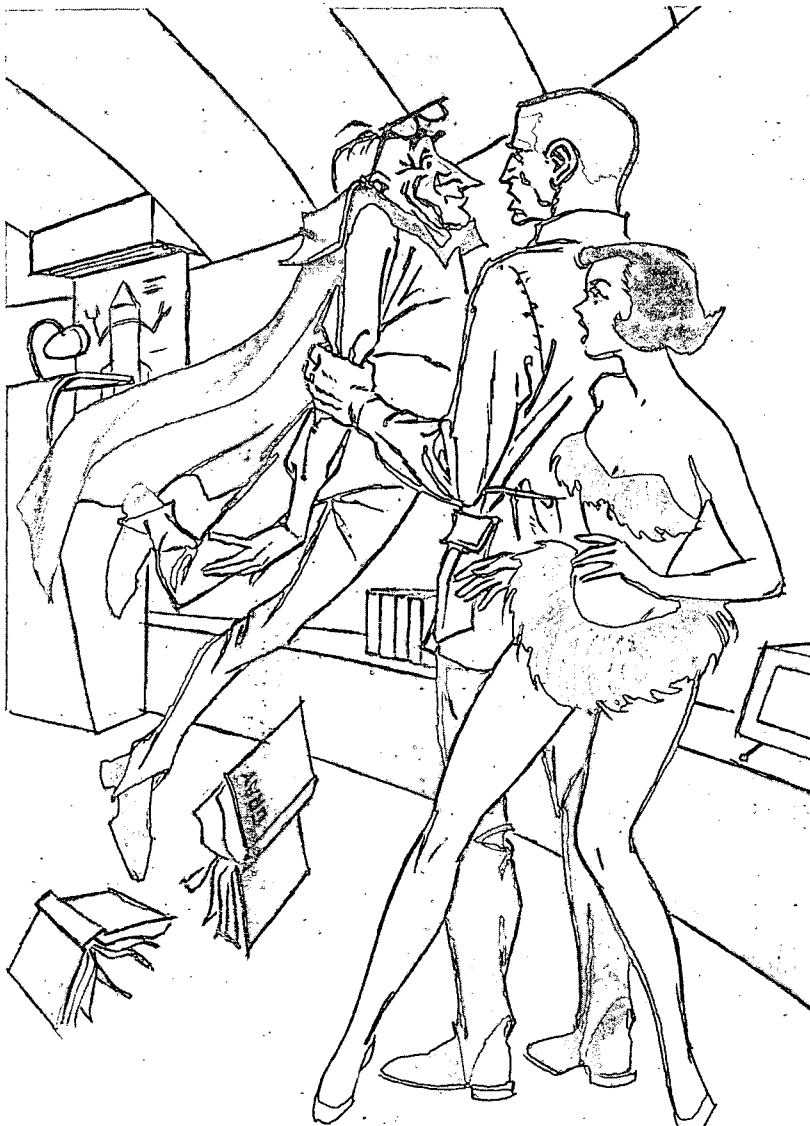

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lar-reporters were baby rockets that gouged specimens from the planets they were sent to, measured, recorded, and brought themselves back on the same tracker path. When they were not burned up in stars, that is.

But if the three of them were willing to take that chance, I was not going to get in the way.

"I may not be as bright as you three," I said. "But even I can see you may have something here. If you survive the journey. You don't need to threaten me about telling you how this specimen collector works. I'll help anyway."

We prepared the specimens I sent out to get, then experimented.

I could not get used to seeing each of them inside an expanded grain of sand, but the pore structure and the crystal lattice itself seemed to leave them room to breathe. They could even move about, within small limits.

The crystal had to be expanded up to a reasonable size before it was safe to be transmitted into it, for an unexpanded quartz crystal would be immediate suffocation. The force vortices of the quartz nuclei, even when expanded, seemed to have no effect on a living body. It was a solid solution, as John said.

"The ideal," he added, "would be for us to coach Morry up to the stellar-reporter class levels. But I think we had better start meanwhile. No sense wasting time."

"I think so, too," I said.

BEFORE we left the open desert, I unpacked the apparatus so they could examine it. They thought they could make sets without much difficulty. The apparatus was largely an electrically inhibited accelerator, they said.

I knew the desert quite well, including the areas where the Institute radar boundary fogged out and where people could crawl in a few hundred yards without being detected.

"That's all we need," Burns said. "If we plant another set of plates and power controls out there, and Morry keeps burying prepared crystals in advance, he can meet us there, do the conversion and bring each of us in in a half-inch crystal in his pocket."

"Then what?" I asked.

"Then you hand us over to little Dimples. She'll get us into the right stellar-reporters together with a reduced set of plates and controls so that we can reconvert on the planet. We can travel in the specimen grabber. That will dump us out immediately the stellar-reporter lands."

I knew little Dimples by sight. She was a plump redheaded student in their class.

"You can't all go," I said.

"Why not?"

"Because I can't leave the Insti-

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tute grounds. Anyway, where are you going to collect the other emigrants from, once you're out on a habitable planet at the back end of the Galaxy?"

"He's right."

We talked it out as I drove the trailer back to the Institute. Two of them would go immediately, each to a different planet on the list. They would return to report and be sent out again on the next stellar-reporter collecting data from that planet. Meanwhile, the third would be expelled. He would spend his compulsory Holiday selecting people for despatch. I would meet them at the boundary, convert them and carry the crystals in, for Dimples to insert into the stellar-reporters.

They disappeared into the metallurgical labs as soon as I pulled up in the main courtyard. The Director missed them by micromillimeters.

David Adam Smith was a small man. With his cloak and large hearing aid and long thin face, he always made me think of a grounded bird. He came hopping over the tiles with short quick steps, peering at the specimens and at me.

"Go out again tomorrow," he snapped. "I want some copper chloride specimens."

"Would you like me to drive the bubble-dancer to transportation?" I asked.

"Who? Oh, that girl. No, Morris, I sent her away. You'll have to confine yourself to the curriculum, I fear, hig, hig, hig."

That was odd because I thought I was about the only person in the Institute who could drive a land-vehicle. The roads outside were built over and everyone used jets. But I wouldn't have put it past him to have made the girl walk out of the desert, or to have sent her in his own space-glass jet, depending on how he assessed her publicity value.

I forgot about it while carting off the specimens.

DIMPLES was pretty, a trifle Venusian in her plumpness but very intelligent. We met by the fountain in one of the smaller courtyards. John Thay, she told me, had volunteered to remain but I was to collect the other two from the boundary.

"They won't be too heavy will they, Morry?"

"Three or four pounds. Living substance modifies in some way, or it may be the effect of being in solid solution in an expanded lattice."

"But you can take them down to half an inch?"

"I hope so."

We arranged to meet just before the afternoon session the next day, so that Lee and Burns would be sent off in the afternoon stel-

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lar-reporters with as little delay as possible.

They were there at the boundary when I drove up the next day. Their converter worked. They were embedded neatly in the quartz crystals. I took them in, handed them to Dimples and that was that.

Neither Burns nor his stellar-reporter returned.

We never knew what happened. Some of the little rockets did fail. Not many. But it was his misfortune to be in one that did not come back.

Lee White did return safely, and was sent out again to his chosen planet.

We began to handle crystals regularly. John sent each emigrant with a miniature converter and controls, which I reduced on the edge of the desert and handed to Dimples, who inserted the crystal and the miniature converter into the next stellar-reporter due for Lee's planet. He was accumulating heaps of converters on his planet, but we could not risk leaving an emigrant helpless in his crystal when the stellar-reporter dumped it on the far planet. This way they rolled out together on arrival.

We must have sent out two hundred emigrants of all kinds, for John was sending in a mixed selection to give the far planet every chance of a successful settlement, when Dimples met me at the fountain and cried — moistly — all over my arm.

"Oh, Morry," she wept. "He's found out."

"He," obviously, was David Adam Smith.

"How do you know? What did he say?"

"He hasn't said anything. But I saw one of the emigrants in his private lab! I shouldn't have been there, and he didn't know I was. But I saw him with one on his desk."

"Sure about it?"

"Absolutely certain. It looked like one of the men with a beard we sent through about a month ago. Do you remember?"

"But how did he get hold of him?"

"I can't think. The stellar-reporters are going off all right. I thought they were coming back empty. I've had to let the rest of my class know, so that we could keep the records faked. We can't account for two hundred stellar-reporters all to the same planet, Morry, so I had to."

I sent the next bunch of emigrants back with a mesesage to John Thay. He came the next afternoon and we met on the edge of the desert. I explained what had happened.

"Is Dimples certain?" he asked.

"The man had a beard and was still in his crystal, the way we sent him off."

John shrugged his shoulders.

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"Well, Morry, it can't be helped. There's only one course now. We must get hold of any crystals in the hands of David Adam Smith and send them off again — unless you and Dimples and all of us want to end up in a satellite penitentiary. I expect he's preparing a case against us now. With his influence he can make it stick. No doubt about that."

Illegal emigration, criminal use of the Institute property — oh, from that angle there was enough to have us all put away in space all right. I had no doubt that David Adam Smith would do it, too.

"NOW, his weakest point," John said, "is his vanity. That, as we know, is immense. Who else would run an Institute for three hundred students with himself as the sole Director? So, if we can arrange something to keep him occupied for a day or two, we may be able to break up into his private labs through the floor. I know for a fact the walls and ceilings are studded with alarms. But we thought of booby-trapping him when we were expelled, and the floor seemed the best way in."

"And the diversion?"

"You'd better take me in now in your pocket. I want to have a word with Dimples' class."

He stepped on the maxima plate. I converted him down, buried the plates as usual and went back to the Institute.

I gave the crystal to Dimples.

"Meet me here in an hour," she said.

An hour later, she was back.

"Here, Morry. This is the power slicer from a shovel. There's one in every stellar-reporter for cutting rock specimens. John says you can come up from the cellar with that. Do you know what he means?"

"Yes. What's he doing with you?"

"You'll see. Just come to our class area tomorrow as if you're delivering specimens. Put the crystal with John in it in your pocket and go and report to the Director exactly what you found in our area — apart from the crystal, of course. You are to release John from that when you get to the cellar, immediately after David Adam Smith goes hurrying out to see what happened to us."

She would not tell me any more than that.

So when I found next morning that every stellar-reporter in the class area was missing and that Dimples and her entire class had gone with them, I did not have to act astonished. About a third of the Institute — nearly a hundred students — were in that class, doing nothing else but build a complete catalogue of the stars and their planetary systems by means of the stellar-reporters. And the whole lot had gone!

David Adam Smith did not be-

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lieve me, either, until he saw for himself. Then he sat down to work through the firing calibrators to find out where the stellar-reporters had been sent. He waved me away.

I went straight to the cellar beneath his private labs and reconverted John. He stepped off the maxima plate swiftly before the crystal could materialize him.

"Hey," I said, "you've reversed it."

"Naturally. It's a minor adjustment in the time-lag. Otherwise there would always have to be a second person present before you could get out of a crystal. We think that's what went wrong with poor Burns Gilbert. But we'll never know, I'm afraid. Let's get on."

We set the power cutter to work on the cellar ceiling.

It was only designed to cut rock specimens small enough to be brought back in the stellar-reporters that carried it, but after two hours we had a hole right up into the private labs.

I lifted John Thay and followed him up.

DIMPLES was right.

There was a long row of crystals in a nutrient tank against one wall, arranged so that it could not be seen into from the windows. About fifty crystals were racked there and each had a six-inch figure in it. I walked over to look at them with John.

"These aren't the ones I sent!" John said.

"They're not?"

"Not one."

We looked at the line in silence. I had gotten used to handling filled crystals, but the sight of all these human beings, miniature and watching us, making waving motions so far as they could within the lattice of their crystals — this was unnerving.

"No," John Thay repeated. "These are not ours. But that one there is the bubble dancer we were expelled for bringing here!"

I looked at the little figure, pink against the clear quartz.

"Who are the others?" I asked.

John Thay walked briskly down the line scooping them up.

"Never mind that for a moment, Morry. Just help me collect every one of these."

I grabbed handfuls of crystals from the rack, stuffing them in my pockets, until between us we had every one.

John took a last look to check. Then we dropped through the hole in the floor, down into the cellar.

"I had an elaborate plan in mind," he said to me, as we hurried away. "But this changes everything. Is the converter in your truck working?" We shot out into the courtyard.

"If you're in a hurry, John, why not use the one there in the cellar?"

"Hell, you're right. This has

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shaken me so much I can hardly think. Quickly, let's get these crystals reconverted."

We turned and rushed back to the cellar we had just left.

I grabbed the power controls, John fed the crystals onto the minima plate, I pressed the button and fielded the staggering human being off the maxima plate before the enlarged crystal came following through. The crystals I kicked into the corner of the cellar.

We did not talk, but concentrated on this rush conversion.

When we had released the last man, there were fifty-three people in the cellar, including John, myself and the bubble dancer, who for some reason clung to me and kissed me.

Most of the people were elderly men. Their clothes were tattered and stained by nutrient solution. Some were threadbare. Many had been wearing laboratory coats of ceramic fabric, which had chipped and fallen away in patches.

They must have been in the crystals for a long time.

I watched John bend anxiously over a group of elderly men.

"Doctor Firnivale. Professor Marrpole. Doctor Hutk. And Williams."

The men we had just released nodded in turn.

"You, Dr. Firinvale," John said. "Did you give the advanced geophysics lectures?"

"Through that crook's hearing aid," said the tattered man on the cellar floor. "Yes, I did. I could hear the questions and I told him the answers. So did all these others here."

"Professor Marrpole, I recognized you from a stereo-record you made on magnetic differentiation on small planets. Is that how David Adam Smith became the world authority when you disappeared?"

"Yes," the man with the shaggy beard confirmed. "He caught me by asking me to stand on a plate for a live recording."

JOHN turned to me.

"We have here, Morry, a careful collection of the leading specialists in the world. These people are the reason for David Adam Smith being able to outthink any fifty men. These are the fifty men he built his reputation with!"

"I don't understand why you all helped him," I said.

"Because he used to oscillate the crystals we were in, young man."

"But now it's our turn!"

"By heaven, wait until I meet that treacherous snake . . ."

"I'm going to sue him for every credit he has!"

"Who would care to join me in pulling him into small pieces surgically?"

The babble in the cellar rose in volume and intensity. Under it all, the bubble-dancer was whispering

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in my ear how grateful she was to great big me, and how that foul old goat had kept her for amusement just because she walked into his office to complain when he fired those nice boys . . .

"He had to, I suppose," I said. "If you saw all these people in crystals."

"Gentlemen, gentlemen," John roared. "Please!"

There was silence.

"Thank you. Which of you in fact thought of the stellar-reporters for accumulating data on other parts of the Galaxy?"

"I did," said a tall thin man by the door. "Higgins is my name."

Even I had heard of the astrophysicist inventor.

"Had it occurred to you that with these crystals and your stellar-reporters man could expand through the Galaxy?"

"No. But now that you raise the point, of course we could!"

"My friend, Morris here, and I and some colleagues have been doing so privately for some time . . ."

John waited until the excited murmuring died away.

"We thought David Adam Smith had discovered us. And that is really why we broke into his office . . . and found you all there. But I now think he knows nothing about it. Subject to your agreement, I suggest we should keep him in ignorance, lock him in a quartz crystal here and continue the private migration without involving him."

"Why not bring him to justice?" asked Higgins.

"Because I doubt if the government would believe their eyes. You have built David Adam Smith into a legend that would be difficult to break. Also because they would certainly take the Institute from anyone else, hold up the experiments and delay everything. And I have a lot of friends out there in space trying to establish a planetary colony."

Marrpole laughed.

"Really," he said, "we have been providing all the brain power of this Institute for so long, we may as well continue. Speaking for myself, gentlemen, a few years free from any restraint whatever are exactly what I now need. I am in favor."

There was a general mutter of agreement.

"Thank you," John said. "And now, if you will follow me, there are excellent showers and a whole class of spare rooms."

"You stay with me," I said to the bubble-dancer.

I led her through the Institute to the classrooms where Director David Adam Smith was still plotting the courses of the missing stellar-reporters. They would be back soon, but he was never to know that.

I took him from behind and held him off the floor by his elbows, then

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twisted him round in the air so that he could see us both.

"Yes," I said. "She's out. And you're going in."

He started to scream so I clipped him.

Then I carried him out to his private labs. I made him unlock the door and unset the alarms, dumped him on the maxima plate of his own converter and shot him into a spare enlarged crystal he had on his desk, after taking off his hearing aid. He didn't need it. It was only an amplifier so that he could hear the advice of whoever was in there at the time. I put him in and clipped the mike onto my shirt.

"What are you doing?" asked the bubble-dancer.

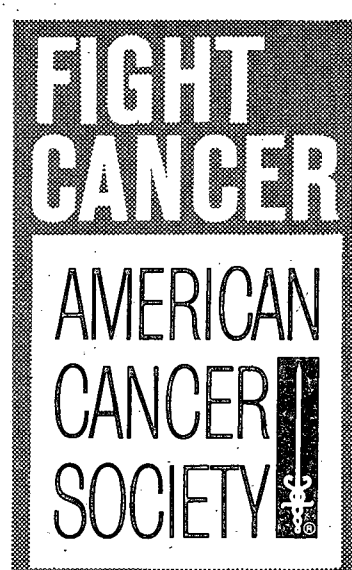
"Look," I said. "This fella could do it. And someone's got to take the other lectures. And I'm never going to get to be a qualified professor any other way."

"But I thought they said he didn't know anything?" the bubble-dancer asked.

"He must remember some of it, or I'll oscillate him at a high frequency."

Meanwhile, I thought I'd practice laughing, "hig, hig, hig." But the former Director did not seem to find it funny.

— JAMES STAMERS



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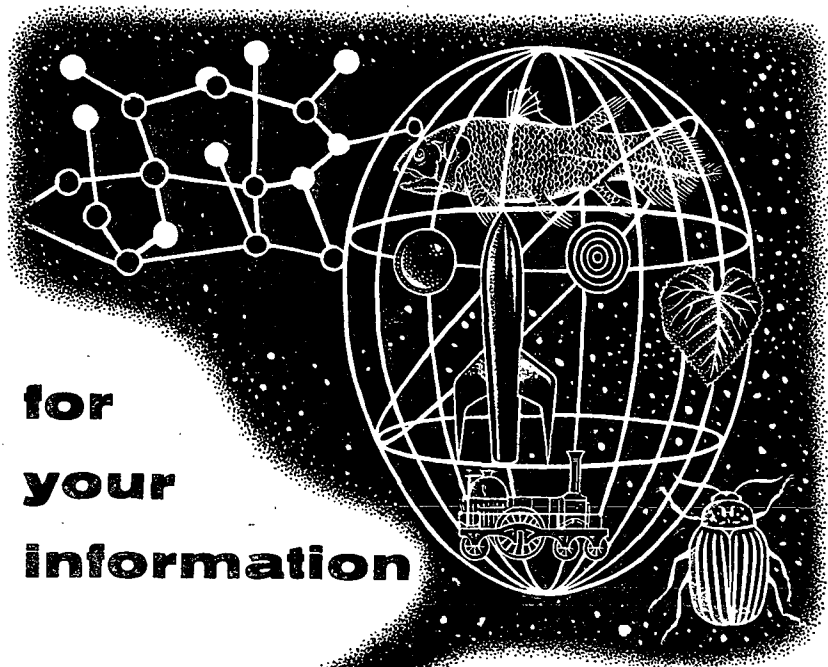

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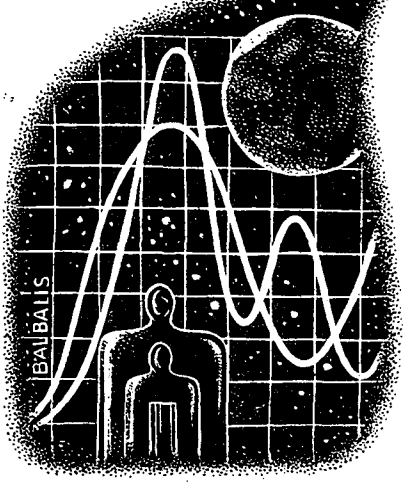

What's Only Money?

THE opinion of a person on the value of money depends, as a rule, on how much of it he owns at the moment. So let's not waste time with ethics, morality or financial philosophy. If I had not just sworn off philosophy, I would now say that I mean the actual money which has been with us for as long as people could count, and is apparently going to stay with us for as long as they can still count.

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Although in science fiction money is mentioned quite often — some writers are realists and assume that budget fights will also be with us for as long as there are budgets, which is perhaps forever —you rarely hear anything of what kind of money it is. The hero often pays "three credits" or "two stellors" for a meal or something, but just what does he pay? Does he hand over paper bills or does he drop coins on the counter?

I can think of only a few instances where science fiction writers were more specific. When Kimball Kinnison loses a "one millo bet," he sends a coin halfway across the Galaxy, being a Lensman and, as Galactic Coordinator, presumably entitled to free mailing privileges. When the hero in *Gravy Planet* is lost in South America, he feeds plastic coins into a pay telephone — without getting his connection. George O. Smith, having invented a duplicator which can duplicate anything, then had to invent something (an alloy, I think) which could *not* be duplicated because it would blow up if anybody tried to.

I can think of another example, this one from foreign science fiction. Kurd Lasswitz, in his *On Two Planets* (way back in the final decade of the last century), described how his hero had to pay for a trip on Mars. The Martians expressed values in terms of electric current; the trip cost an unspecified number of kilowatts and the payment is made in the shape of a coin which is a storage battery actually holding that number of kilowatts.

Since the future of coinage is so disputable, let us look at the past and see what has gone before. I'll not dwell on weirdies like payments in strings of cowrie shells or the big stone money of the island of Yap but stick to normal coins.

IF you ask anybody which metals are used for coinage, you receive the more or less automatic reply "silver and nickel." If you keep quiet, the man will somewhat shamefacedly remember that there are copper coins, and everybody knows, naturally, that Dad still handled gold coins. Actually nickel is a late-comer to the coinage picture; it is just about a century old. Before that, the coinage metals were gold, silver and copper.

The most valuable of them, the gold coins, seem to have started out as *electrum* coins. *Electrum* is a naturally occurring alloy of gold and silver, and one might say, as a rule of thumb, that gold containing more than 20 per cent silver was *electrum*. The trouble was, of course, just how much silver a given lump of metal contained. Was it 20 per cent or 30 per cent or still more?

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By about 700 B.C., gold could be separated from silver and the first gold coins came into existence. Since nobody ever threw a gold piece away, the number of coins from the past that are still around is simply fantastic (everything the gold would buy has been used up, worn away, decayed or eroded, but the coins remain) and it was no great loss to history to analyze a few of them. They turned out to be 997 and 998 fine, actually too high a purity to be practical, for pure gold is a rather soft metal.

When it comes to purity, the layman generally flounders a little. He knows that 14-carat gold is good gold, and when he looks for a stamp, it probably says 14K. But if he should buy a wedding ring in England, the salesman will say "22 carat, of course," but the stamp inside is likely to read 917. The system here is that pure gold is 24 carat or 1000. Consequently, then, gold of 12 carat would be 500, the other 500-1000th being usually silver; normally the best gold used for jewelry is 18 carat or 750. But coins run from 917 (British) to 980.

"Pure" coins continued to be made though, long after it was realized that pure gold was too soft. The Palatinate (in West Germany) struck coins from gold washed from the Rhine river; they felt that *Rheingold* must not be alloyed. The city of Hamburg could not do less, so there are Hamburg coins (say of about 1750) of more than 990 purity.

Aside from these facts, only a few oddities can be told. The biggest gold "coin" ever to exist is one mentioned in the Bible; it is the gold "wedge" or "tongue" of 50 shekels' worth. But we don't know how it looked. The largest known coin was struck in 1654 by order of Shah-Jahan, Mogul Emperor of Hindustan. It was a 200-mohur piece with a diameter of 5⅜ inches. Knowing what a mohur piece is supposed to weigh, its weight figures to more than 70 ounces. We can't weigh it any more because it is lost, but it was last seen in Patna in 1820 and about that time somebody made a plaster cast which is now in the British Museum. The second largest (not lost) is a Venetian 100-zecchini piece (undated), with a diameter of 3⅛ inches, while the third largest (you can buy one for about $6000) is a Bohemian 100-ducat piece of 1629 with a diameter of 3 inches.

TO give you a more tangible comparison: the "cartwheel," the U. S. silver dollar, has a diameter of 1½ inches and an official weight of 412.5 grains. Its true weight may be 6 grains more or less. The double eagle, the U. S. $20 piece, has a diameter of slightly over 1¼ inch, and the diameter

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of the British 5-pound piece is 1⅜ inch.

As for silver, it is *the* coinage metal. Coin catalogues usually state what metal a coin is: G for gold and C for copper, but if the coin is silver, nothing is said. Silver coins, if U. S., also have a fineness of 900, but this time the 900 means the silver content; the remainder is mainly copper. The largest silver coin is almost the same size as the largest gold coins — it is a 4-thaler piece of Brunswick (1685) with a diameter of 3¼ inches, more than double the diameter of a dollar piece.

Before we proceed to nickel and copper, it must be mentioned that one country once had platinum money. In Russia, three platinum coins of 3, 6 and 12 ruble denomination were minted between 1828 and 1845. Just in case somebody is curious: they are not rare, merely expensive; a fine specimen of the 3-ruble piece will cost around $250.

Nickel, as I mentioned, is comparatively new on the metallurgical scene. Before it became available, money smaller in value than silver would conveniently be provided by copper. Well, it was copper with other things in it and that has produced a few mysteries. Let us first get the terminology straight.

Copper, when pure, is very soft too. The trick of adding tin to make it hard was discovered early. Copper with 10 to 15 per cent tin in it is called bronze; if it has 15 to 25 per cent tin in it, it is called bell metal because it was used for church bells. Brass, however, is copper with an admixture of zinc, and zinc did not become known until around 1500 A.D., and even then it was often confused with bismuth.

Many copper coins through the ages contain such comparatively small admixtures of other metals that calling them copper coins is fully justified. (The U. S. 1c piece, for example, is 95 per cent copper with 5 per cent tin and zinc.) But bronze coins with 10 to 15 per cent tin were also common since ancient times. For example, Celtic coins found in 1948 in England and dating back to 80 B.C. are bronze with 10 per cent tin.

Brass coins came much later, but they have a forerunner. One Roman coin, struck under the reign of Augustus, was found to contain 17.3 per cent zinc — straight "brass" of our terminology. But real brass was not developed until nearly 1700 years later. Correct—the brass of the Roman coin must be an accident, made from copper and zinc ores that occurred in conjunction.

Coins which were brass on purpose, so to speak, are rather unusual; most of them were due to an emergency of some kind. The

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most famous is the one which produced what is called "Irish gun money." When James II of England fled to Ireland, he gathered an army to force his return. The army wished to be paid. James took what he could get: bronze cannon and brass cannon, bell-metal bells, and bells of whatever alloy they happened to be. The guns and the bells were made into money, the so-called "brass shilling" being one of them. The workmanship of this "gun money" happens to be excellent, but the composition of any specific coin couldn't be more indiscriminate.

IT may be mentioned in passing at this point that British law was peculiar for several centuries. To forge gold or silver coins was punishable by death or deportation to an outlying colony. Forging copper coins, however, was just a misdemeanor.

Also in passing, the term cartwheel, so common for our silver dollar, was originally applied to a copper coin, the tuppence of George III of England which measured 1⅝ inch in diameter and was also very thick. (The Czars of all the Russias beat this later with a copper coin two inches in diameter, but you had to travel to Russia to see it, for Russians who could travel abroad would not declass themselves by having copper coins in their purses.)

Though bronze has been in use for a long time on and off, it did not find much favor in the Western Hemisphere. The Confederacy struck a 1c bronze coin, but it was not placed into circulation. The Union struck a 2c bronze piece in 1864; it did not live long. However, Americans can now handle bronze coins without crossing the ocean: the Canadian 1c of 1937 and the Mexican 20 centavos of 1943 are both bronze.

In trying to get back to nickel, I first have to say that there *was* a wooden nickel, or rather a wooden 5c piece, but it was local. And this side issue — nickel still has to wait — brings up the larger side issue of which other metals were used for coinage.

Well, a section of ancient India and more recently the Malay states had lead coins. More recently, on the Malay peninsula, you had "money trees" (Fig. 1.) from

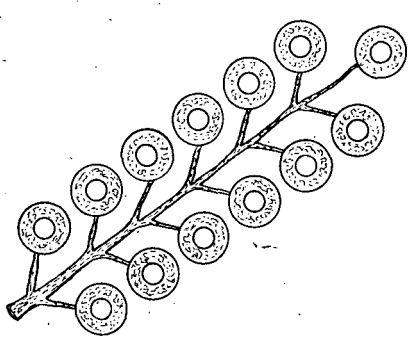

Fig. 1: Malaccan "Money Tree" when new. Broken-off "change" had center holes for stringing. The metal was pure tin.

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which you broke off what you needed. They were usually tin, sometimes lead.

The ones who went in for new metals for coins were the Germans during the first World War. The Imperial coinage prior to 1914 consisted of the following: 1- and 2-pfennig pieces (copper), 5-, 10- and 25-pfennig pieces (nickel), ½ mark, 1-, 3- and 5-mark coins (silver) plus 10- and 20-mark coins (gold).

About three months after the war started a few changes became necessary. The gold and silver were needed for foreign exchange, so everything from one mark up became paper. The nickel was needed for steel and the copper was needed for driving bands for artillery shells. Still, the people needed small change, or else the very lack of small change would help inflation along. So the 1-pfennig piece reappeared in shiny aluminum and the 10-pfennig piece in dull zinc. A year or so later, the 1-pfennig was no longer needed and the 10-pfennig became iron.

It was the first zinc and the first iron coinage. As for zinc coins, Belgium adopted this metal in 1920 for small coins. And the Germans repeated during the second World War as occupation money for The Netherlands. Iron was used for 1c pieces in the United States in World War II.

BUT the 1-pfennig piece was not the first aluminum coinage. The French had announced a whole set of aluminum coins in 1906, but then did not issue them. (They have aluminum coins now.) The British did make aluminum coins in 1908 for British East Africa, but they were universally distrusted. However, the first aluminum coin was a Texas local token. It was about the size of a silver quarter — unfortunately I only have a photograph which does not show the denomination. The year is clear, though — it was 1890.

Aluminum and especially aluminum bronze coins are now in use in many countries, and after mentioning that the state of Saxony issued porcelain coins in about 1921 (they did not last long, but not because they broke easily; they didn't — inflation soon made their denominations ridiculous), I can go on to nickel as the concluding item. Actually the U. S. "nickel" has that name mostly by courtesy, for its official composition is 25 per cent nickel and 75 per cent copper. It is what might be called nickel bronze.

There is a reason for that which was first established — rather painfully — by the Swiss government. During the early part of the nineteenth century, when nickel became available in reasonable quantities, several manufacturers

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started compounding nickel alloys for cheap jewelry and ornamentation. A German firm was especially successful with an alloy which they named Argentan — Latin *argentum* is silver; the trade name was meant to indicate that it looked like silver but wasn't — but in other countries it was quickly dubbed "German silver." Its composition was, and is, 55 per cent copper, 25 per cent zinc and 20 per cent nickel.

In 1850 the Swiss government thought that Argentan would be a nice metal for small coins since it was so hard and durable. But the Swiss also wanted to make their coins more valuable, so they added between 5 and 15 per cent of silver, the percentage depending on the face value of the coin. This happened to produce an alloy that they just could not handle, it was so hard. The coinage die made such a shallow impression that the coin looked as if it had been in circulation for at least thirty years. Increasing the pressure broke the die.

After experimenting for several decades, the Swiss decided to use pure nickel, or almost pure, because somebody named Fleitman found that nickel became tractable with one or two per cent of magnesium added to it. Thus the Swiss in 1881 made genuine nickel coins. Nobody else ever did. The Belgians started the 75 per cent copper and 25 per cent nickel alloy in 1855. The United States struck their first nickel pieces in 1865. They were 3c pieces. The 5c nickels followed in 1866, slowly replacing the silver half-dimes.

These 3c and 5c pieces had the current composition, first used by the Belgians, but from 1856 to 1863 we had what was called "white cents," containing 22 per cent nickel, otherwise copper.

LIKE the first brass coin, the first "nickel" was also accidental. Numismatists, well acquainted with a coin struck under the reign of the Bactrian king Euthydemus II in 235 B.C., noticed that it looked different from all other ancient coins, and finally a much damaged piece was sacrificed for chemical analysis. To the chemist who performed it, the result might not have looked too strange, but the coin experts whistled in surprise. The result: 77.6 copper; 20.0 nickel; 1.0 iron; 0.54 cobalt; 0.86 residue.

No, the mintmaster of king Euthydemus II was not 2090 years ahead of his time; the mystery can be explained if we assume that the ingots came from China. Mines in the provinces of Yunan and Szechuan did produce something called *pei-tung* or "white copper," an accidental mixture of nickel and copper ores.

Well, now for the future.

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What should a one-credit coin be like? To begin with, it should not be too large, but neither should it be too light, for there is some reassurance in the heft of your change. Of course it must look attractive and not tarnish. Naturally it must not show wear. Since it will be much used in vending machines, it must have some characteristic by which the machine can test it. Let us say it must give off a sound of a specific note if dropped one centimeter onto a stainless steel bar. It might fluoresce under ultra-violet light with a sharply defined specific wave length.

It must be such, in short, that laws against counterfeiting are unnecessary because nobody could do it anyhow. And its value must be definite and stable.

May your grandchildren own more of them than their helicopters can carry!

ANY QUESTIONS?

Chow Call

MY first letter is from somebody I know personally, a fellow writer and good personal friend: syndicated TV columnist Eve Starr out in Hollywood.

She asks two feminine questions. One is easy to deal with, for it concerns the clothing that will be worn in a spaceship. The answer is: "Not very much, but what there is will be comfortable though not loose. A loose garment might catch on a switch or something similar."

The second question is one I can answer only by great good luck (other people have done a lot of research on it and have just published some of their findings). That part of the letter reads: "Just what are our astronauts going to eat in space? I know, mainly from your book, that the idea of ultra-concentrated food pills is an impossibility. But nowhere, not even in your book, have I found any specific information of just what they will eat."

Yes, Eve, that is not in my book — at least not yet — and you are very much yourself in asking that question. For those who live in cities where Eve Starr's column does not appear, I have to explain that it deals with television and that she is in the habit of poking a well-manicured finger at precisely the point which the producer, director, actor or script writer had hoped would not be noticed by anybody.

Now, as for the food which will be eaten by a space crew, it clearly falls into two categories: the food which is taken along as food, and the food which is produced while under way.

The ratio between the food that is carried and the food that is

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manufactured will depend mostly on the duration of the trip. For orbiting Earth for a day or several, and even for the ten-day flight around the Moon without landing, *all* the food will be carried along. Only when a space mission takes at least a month will manufactured food be considered at all, and when the duration approaches a full year, the manufactured food will outweigh (in the literal sense) the food that has been taken along.

AS regards the food which is to be taken along, there are several requirements. Of course there must be no dead weight, or as little as possible (things must be wrapped, after all). Moreover, the food must resist spoilage, remain appetizing, be not monotonous and, most important, it must be something that can be eaten under weightless conditions. The latter mainly means that it must not be dry and crunchy, for dry food is almost impossible to eat when weightless, as I explained in an earlier column.

Food manufacturers have started research in two directions, the "toothpaste" foods and the "lipstick" foods. The former can be squeezed into the mouth from a tube. The ideal is that the tube itself is edible too. If that cannot be accomplished, it should have as little mass as possible (thin plastic tubes would do that). The lipstick foods also live up to their name — there are foods of a certain consistency which can be shaped into sticks from which one can bite off a piece. If you imagine a stick of fairly soft cheese, you have a rather good idea of one type of such lipstick foods.

As regards the foods manufactured en route, all I could have said only three years ago was that the space engineers had certain ideas. But now we can be much more specific — let's admit it — partly due to research work which did not have space travel in mind at all.

For the last eight years or so, I have been pointing out that oxygen for breathing does not need to be taken along on long trips, because it can be manufactured by growing plants. For several reasons, it was known that the single-celled alga known as *Chlorella* was especially good as an oxygen manufacturer. All it needed was water (in which it lives), carbon dioxide (produced by the crew members) and sunlight (available in space at any time). Now these *Chlorella* algae, in producing oxygen, also reproduce themselves. Which means that after a week you have a much larger supply of *Chlorella* than you had at the outset.

Once this was realized, the question came up: "What do we do with the surplus chlorella?" The answer was: "Eat them, if

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they are edible." But as far as space research was concerned, no additional work was done for a while. Now it happens that Japanese researchers have investigated the edibility and food value of *Chlorella* — but they did not have spaceships in mind; they were just interested in additional food supplies.

Chlorella, it turned out, was simply excellent. To begin with, it was edible; the Japanese made a *Chlorella* soup which looks green and pleased their taste. European and American researchers admitted that it might be nourishing, but said nasty things about the "cod liver oil taste." As a personal aside, I might mention that I happen not to share the wide dislike for that taste. I don't adore it, but it doesn't disturb me.

Leaving the question of taste aside for the moment, the nutritional value of *Chlorella* is most unusual. One kilogram of dried algae contains 5300 calories — or one pound contains 2410 calories, if you prefer the unscientific measurements.

Not only is the caloric value large, dried algae also contain a nice proportion of the items that make a balanced diet; 40 per cent albumin, 20 per cent fat, 30 per cent carbohydrates and 10 per cent mineral salts. As for vitamins, dried algae come through beautifully: a mere 100 grams (about 3½ ounces) contain more than the vitamin requirements of an adult per day, except for vitamin C, which is plentiful in fresh living algae but destroyed in drying.

LIKEWISE, the so-called "essential amino acids" are present in fully sufficient quantities, and there is also enough fat. In fact, it is quite easy to make *Chlorella* produce more fat than it usually does. The trick is so simple as to be nearly ridiculous: just prevent the algae from getting nitrogen. If they can't get nitrogen, they cannot produce albumin, and after some time they cannot reproduce any more because there is just that much albumin available to them. However, while they can no longer split, they still go on living and producing food, but because nitrogen is lacking, the only food they can make is fat.

As I mentioned, the taste is too much like cod liver oil to please Europeans and Americans. For this reason Madame N. Tamiya concocted a few recipes for non-Japanese, like white bread with *Chlorella* and green noodles with *Chlorella.* But the addition of the algae is only about six per cent of the total weight, not enough for space voyages.

Knowing that the taste is suppressed by the addition of sugar, Mme. Tamiya produced her mas-

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terpiece: *Chlorella* ice cream. The ice cream is very nourishing, has a pretty light-green color (which, to our mind, is all right for ice cream but somewhat disturbing in bread) and is vanilla flavored.

While Japanese scientists were going after *Chlorella* for direct consumption by humans, scientists of the Boeing Aircraft Company followed a different idea. Is there something that lives on *Chlorella* — or any kind of algae, in case somebody comes up with another alga which is a still better oxygen producer — and which people would eat?

The answer is *Tilapia* (Fig. 2).

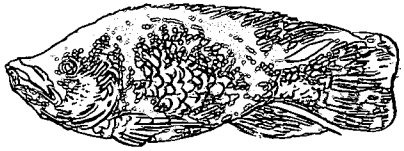

Fig. 2: *Tilapia*, of the family *Cichlidae*, the fish that will go to Mars.

Tilapia is a fish, of a size that a man can comfortably hold in his hand, with the tail hanging out. It is a fresh-water fish perfectly adapted to scum-covered tropical ponds, peaceful, content if it is provided with the two necessities for its life: warm water and plenty of little algae to eat. In nature (the fish is spreading fast through the tropics, naturally), it will probably snap up insects which have fallen into the water and eat a worm if it can get one. But it will thrive and grow and make nice white fish flesh on a diet of algae alone.

One of the answers to the question of what to do with surplus *Chlorella* is *Tilapia,* so the astronauts will probably add fresh fish to their "toothpaste" and "lipstick" foods. *Tilapia,* in addition to being tasty, has another admirable characteristic for space travel purposes: about eight weeks after it has been hatched, it is ready to produce offspring.

I can add one more specific item, also based on research going on at Boeing: mushrooms. They are a fast-growing kind which can be raised on waste matter. Since mushrooms are mostly water, they do not contribute many calories to the diet. But they do provide flavor and a change in the menu.

Well, here is the space dinner: *Chlorella* soup, boiled fresh *Tilapia* with mushrooms, bread (taken along) with fatty *Chlorella* spread, *Chlorella* ice cream dessert.

Jobs for Space Psychiatrists?

THE next letter is also from a lady, Mrs. Toni Pedigo (no address given), who writes that her husband "is going into psychiatry and would like to combine it with space research. In what way could a psychiatrist work in the field of space research without getting involved with military service?"

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The joker is in the last six words of that second sentence. Otherwise I am quite sure that a good psychiatrist would be welcomed with open arms (and a steady pay check).

The whole field of space research falls into three categories.

First, the machinery, rocket motors, fuels, fuel pumps, control systems and so on. A fantastic amount of work is being done, and has been done in this field — after all, what have I been writing about and revising for the last dozen years?

The second item is the physical well-being of the pilot, bearable accelerations, comfortable cabin temperatures, something to eat. Here, too, a great deal of work has already been accomplished, mostly by the Department of Space Medicine of the U. S. Air Force. And, as my reply to Eve Starr shows, the food problem is under concentrated and apparently successful attack right now.

As for the third item, the mental well-being of the space pilot, I find myself somewhat at a loss for words. Indubitably work is going on, but I haven't read much about the psychological end, except occasional papers by Dr. Siegfried Gerathewohl in the *Journal of Aviation Medicine* and similar places.

I may be completely off-track — tomorrow's mail may bring a nice fat volume on psychological research — but I have the feeling that this field has not been pursued as assiduously as the mechanical and physiological aspects. Maybe this is given by the nature of the case: first we had to find out what could be done, and then what the man (or men) will have to endure physically before psychology could be tackled.

But to do any work here without being involved with the military services sounds like an impossible order. It is true that the Space Agency NASA is a civilian agency, but NASA does not maintain factories where big rockets can be built. NASA goes to Redstone Arsenal, or to the Air Force, and then to Convair and Martin and other companies, and tells them what they want next. Since NASA also does not maintain a big proving ground (their own is the comparatively small one on Wallop's Island), the firings have to be done from the Atlantic Missile Range at Cape Canaveral (run by the Air Force) or from Vandenberg in California.

My opinion, therefore, is this: a good psychiatrist will certainly be welcomed and there will be work for him. Said psychiatrist can continue to wear a business suit instead of a uniform. But he will be involved with the armed services consciously, subconsciously and in any other way there is.

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There Was Darkness over the Whole Land

READER P. Christopher Osborn in Nashville, Tennessee — as a result of a private argument — wrote to ask whether scientists or historians, or both, are in agreement on the natural cause of the darkness at the death of Christ, which, as the Bible says, lasted "from the sixth to the ninth hour." Either Mr. Osborn or the man with whom he argued (the letter is by no means specific on that point, possibly by design) "always" thought that the darkness was an eclipse of the Sun, while the other said it must have been a sandstorm because eclipses of the Sun do not last three hours.

Half of the argument can be settled in one paragraph: it could not possibly have been an eclipse of the Sun. The Crucifixion took place on the last day preceding the Passover week, and it is clearly stated that the first day of that week was a Saturday. Since Jewish holidays begin at sundown, Passover began Friday night at sundown, so the Crucifixion took place in the afternoon of that Friday. Now at Passover the Moon must be full, hence it is at the opposite end of its orbit.

However, there is one more possibility.

Fridays with Passover beginning in the evening hours are comparatively rare. During the latter part of the lifetime of Christ, there were just two. One was April seventh, 30 A. D.; the other April third, 33 A. D. (Julian calendar). Historians are generally in favor of the later date because an early Christian writer stated that the event took place "during the eighteenth year and seventh month of the reign of Imperator Tiberius." That is, from March 17 to April 16 of the year 33 A.D.

Astronomically speaking, nothing out of the ordinary happened on April seventh, 30 A. D. But on April third, 33 A. D., there was a partial eclipse of the Moon, visible from Palestine. As seen from Jerusalem, the Moon rose while in partial eclipse a few minutes after six P.M. From moonrise to the end of the eclipse took half an hour.

It could not have been an eclipse of the Sun.

For the hours given in the Bible, it must have been meteorological, most likely a sandstorm. But on the historically most likely date, there was an eclipse of the Moon in the evening — that is, during the first hour of the holiday week. The possibility of a later "condensation" of events certainly does exist.

I can't help but end this on a note of personal curiosity. Which side am I on, that of Mr. Osborn or his opponent?

— WILLY LEY

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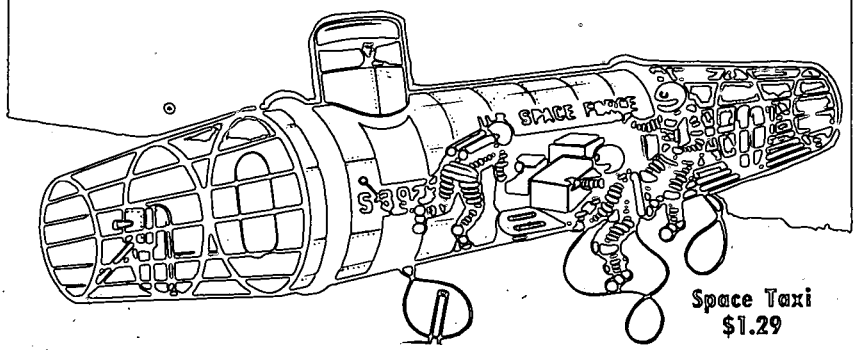

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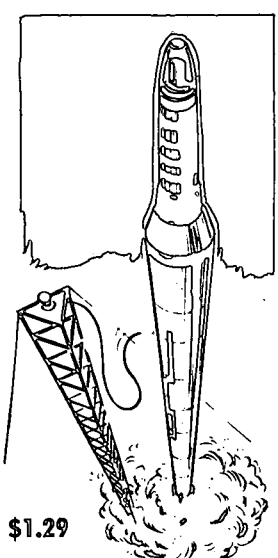

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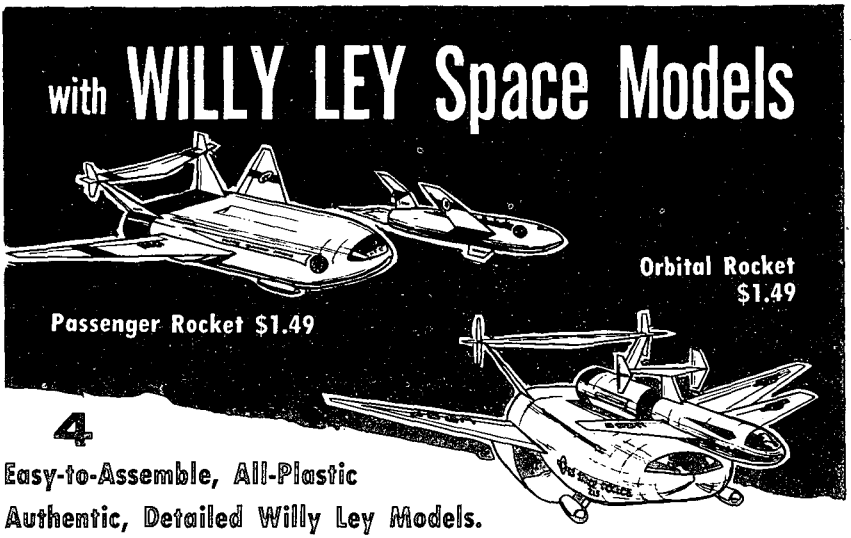

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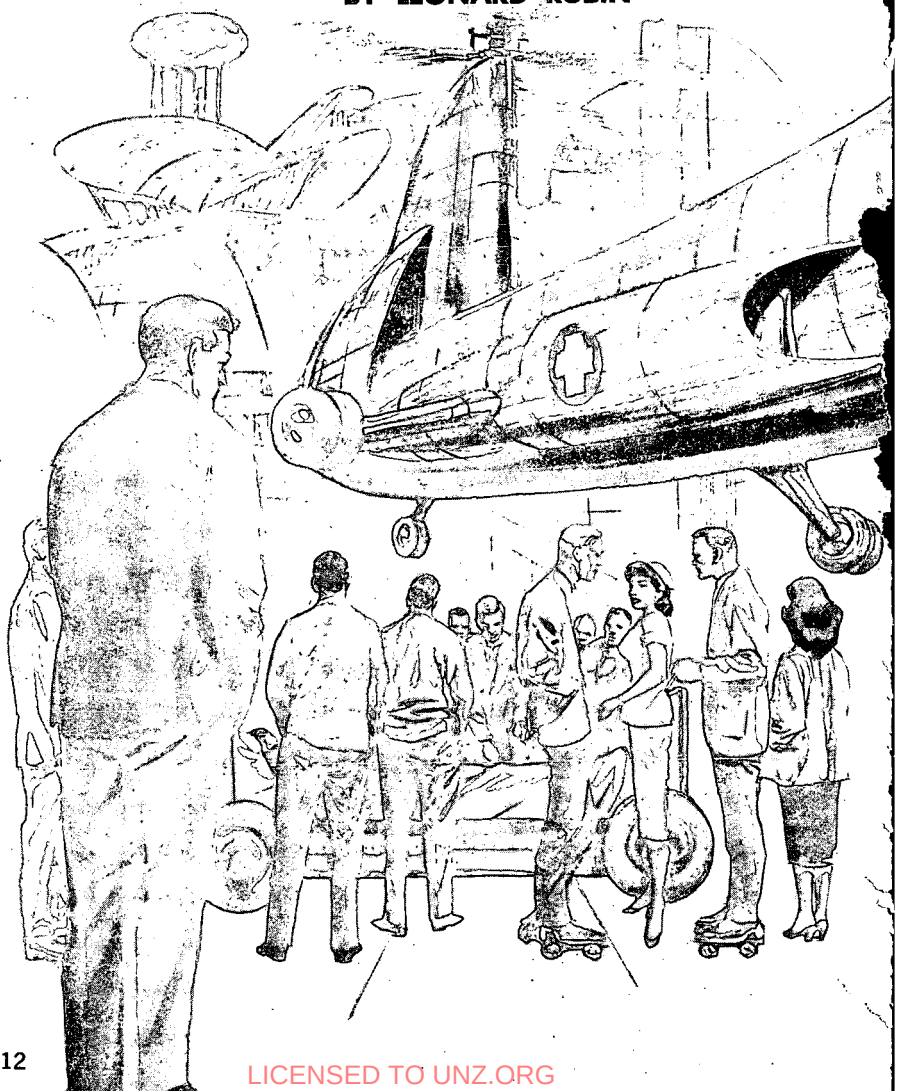

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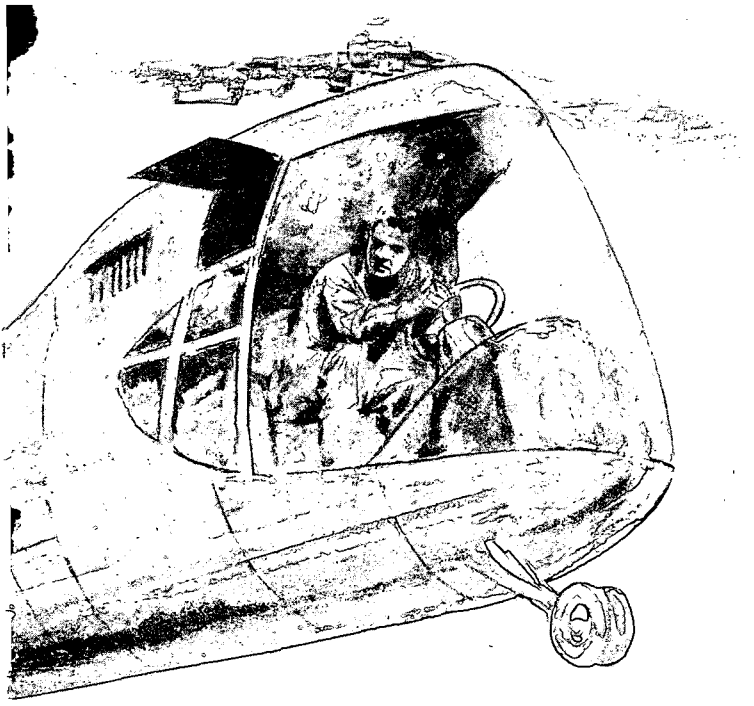

Illustrated by WOOD

"YOU'RE not allowed in the ambulance," Miss Knox said.

They were both typical advertising men, down to the motor-skates strapped beneath their shoes. Their faces were so utterly undistinctive as to seem fuzzy. Each carried a large flat briefcase with a coil antenna sticking out.

The Royalty Party wasn't what you would imagine—it stood for a great deal, but there was as much it wanted no part of!

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"Watch it!" the attendant growled, and they skated aside with a whir.

Big Carl came driving up the ramp, ducked his head to enter, and brought the bed to a stop in the belly of the ambulance. Miss Knox pressed the button and the door closed in the admen's faces.

When Mr. Barger was lowered from the hovering ambulance, his swollen, tearful eyes were sun-blind. Square hands clenched over and over with pain. Above the rotors' *rackety-rackety-rack,* Miss Knox shouted soothing things. She didn't wait for an answer. He was the worst case of laryngitis she had ever known — the only case, really, in her professional experience. Abolished diseases always came back virulently.

She and the bed sank between white hospital walls and landed in the room with a bump. The waiting attendant walked around the platform, folding the safety gates. He unhooked the four support cables, each vanishing out of his grasp like spaghetti slurped from a plate.

Just as the ceiling closed overhead, cutting off sight and sound of the whirlybird against the sun, Brooks, the radiologist, came in through the door, shepherding an entire class of medical students. Then two nurses seemed to clear an inoffensive path through the chemically tainted air of the corridor — and after them came Dr. Gesner, the greatest throat man in the country. Miss Knox knew him from his portrait in the Mushroom.

Brooks winked her an "At ease!" with a shaggy eyebrow and followed the fat man through the crowd. Dr. Gesner went to the bed and sat down. He was Barger's weight, with the same sort of elephantine bones, but he was almost two feet shorter. He stared at the nose and cheeks protruding from the bedclothes, and opened a fat black bag.

A BELL rang three times in the corridor. Five internes scurried into the room and stopped still, watching Dr. Gesner as though he were a golden calf. On each side of the doorway stood a student nurse at attention.

Mr. Barger stopped twitching and opened one eye wide. His chin lifted, and his other chins came out from under the sheet's folded edge.

One of Dr. Gesner's hands felt through the black bag. It emerged dragging a mutape by one wire. Brooks leaned forward and took out the rest of the apparatus. Shaking the hair off his forehead, he plugged into the bedside computer relay and placed the rubber-rimmed cup against the patient's skull, just over the Broca convolution.

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Mr. Barger remained staring at the doctor through a gray film. The mutape chattered rapidly. Miss Knox craned her neck, deciphering the punched tape as it unrolled from the recorder in Brooks' hands. Sweat popped out on Mr. Barger's forehead.

"Help me, damn it," read Mr. Barger's tape. "I know you. You abolished laryngitis; why should it come to me now? I have a right to stop misuse of my work and to be free from pain — my patent is vital — free from pain. I want to be free . . ." His face turned pink in a new contortion and the hands folded over.

"Yes," Dr. Gesner said as the chatter stopped. "I know it hurts." He smiled gently in the middle of his face. He was writing on an index card, but his main effort was devoted to getting up from the bed with the help of two internes. "It will hurt this badly for twenty-four hours. Then the injection will have the upper hand." He turned to Brooks. "Please pass the tape around, Doctor. If any students haven't seen the X-rays yet, they're in my file."

Mr. Barger's face grayed a little; the sweat had turned to patches of crust against his skin. Dipping cotton in alcohol, Miss Knox bathed his forehead.

"That's all," said Dr. Gesner, handing her the card as the students began to vanish.

She stalked after him. "No examination, Doctor?" she asked, ignoring Brooks' horrified expression.

"Unnecessary, Nurse." He backed away from her and the door slid open. "I've already seen the X-rays and charts you phoned from the ambulance. And the patient cannot open his mouth. His intravenous menu is all here . . ."

"Yes, Doctor."

Three bells sounded in the corridor. "Calling Dr. Gesner. Emergency. Please come to the telephone. Emergency. Calling Dr. Gesner . . ."

He rolled his eyes at the index card in her hand. "You yourself are to take the shots prescribed for you, to prevent your catching or carrying the disease. In that bed, but for the grace of God . . ." He was crying softly.

"Doctor!" said Brooks, and the internes and nurses gasped.

"After all," said Dr. Gesner, "I *did* abolish laryngitis."

MISS Knox walked back up the drive and struck a cigarette on one of the stone lions. It glowed in the dark, but the river breeze blew it out before she could draw. She snorted in annoyance.

Miss Erwin looked up sharply.

"Is there *anywhere* where you can still buy matches?" asked Miss Knox.

"Not in New York City. Why?"

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"We used to just try again when a cigarette didn't light. Now we have to throw it away."

"Of course," said Miss Erwin. "That's how they train us to be right the first time."

"Ridiculous. That's how they sell more cigarettes."

"Why, *Miss Knox!* You sound like Royalty!"

Miss Knox laughed. "I'm not ready to join the British Commonwealth yet. No fooling, Hilda, you see the Silvertongue cigarette factory across the river?"

Miss Erwin twisted white-gloved hands in the dark. "Why, no . . . mmm, smell that spray." An ocean-breathing tugboat passed, its complicated silhouette blocking the view. "No-oooooo," the whistle blew.

"Just wait till that tug is gone. There, Miss Erwin. Do you see the Silvertongue factory? Just before the Williamsburg Bridge."

"Is it the one with the new radio — the radio-thing on top?"

"Radiocompressor. Yes."

"They used to put *names* on those factories. All lit up."

"Well, ladies — ladies," said a gravel voice beyond the entrance lights. "How is life in the Toadstool?"

"Boney!" said Miss Knox.

"The what?" asked Miss Erwin.

"That's what Dr. Brooks called it. Now you tell me what he meant — he wouldn't say. Toadstool."

"Come into the light, Boney — you frighten us," said Miss Erwin.

The man appeared, smiling, and climbed the first stone step. Resting his elbows on the lion and his chin in his hand, he looked down on them sideways.

"Not *another* new suit," said Miss Knox.

It was an archaic double-breasted suit in good condition. Where the jacket hiked up in back, a wide expanse of extra trouser seat had been folded over and tucked beneath the belt.

"Hundred-fifty-dollar suit," he said.

"With or without the bottle?" asked Miss Knox.

"What bottle?"

"The one that bangs on your ribs when the breeze blows."

"Now listen here, lady . . ." He came down the step.

"Boney, I'm only kidding. You know that."

"Kidding. *Kidding.* And here I was giving you inside information. *Inside* information."

"What information?"

Bringing his drawn face so close that they could smell the wine, he gave both women a look of scorn. Then he backed away and leaned his padded shoulder against the lion.

"Boney, she's sorry," said Miss Erwin.

"I am not," said Miss Knox.

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HE glowered at her and walked away into the dark, his spider legs dissolving sooner than expected. Then he marched back.

"Sorry," he said. "Ha. I won't tell you. I'm going to tell it to the Director himself."

"Forget it, Boney. He'd throw you out again. You'd better just tell us."

His skeleton hand stretched toward the water. "You see that radio presser?"

"You mean the new radiocompressor on the Silvertongue factory?"

"*Radio*compressor. All right. Do you ladies know what it does?"

"Anything," Miss Knox said. "Our patient, Mr. Barger, builds them. He told us all about it the moment he came. In Greek."

"Not — not *all* about it. *I* know all about it. I had a big deal going — my Armenian partner and me, we were buying up neckties to sell in the hospital..."

"*What* do you know? And will you *stop* blowing in my face?"

He glowered.

"I'm sorry, Boney."

"Radiocompressors can do things — any things — without touching. Like rolling cigarettes or chopping up tobacco. The radio waves are so small they — push things." He pushed the air with his left hand. "Not just go through them." He wiggled the brittle fingers of his right.

"Everyone knows that," said Miss Knox. "What you mean is that the supra-short wave has an intense direct effect on matter. It was in all the papers."

"Oh, is that so? Is *that* so? Well, you listen to me. *This* isn't in all the papers."

"All right, go on." Miss Knox struck a cigarette, which blew out. She threw it down and succeeded in lighting another.

"You can fool people, also, with the same radio waves," said Boney.

"You mean hide behind the door with a wave compressor and push chairs around? Like that?"

"Don't be silly. Nothing like *that*. Dr. Brooks told me today, when I was sweeping his *private* lab in the Toadstool, he told me they make one kind where if you put it on a table, say, no one can see what else is there. You could put — a cat on the table, and anyone would think it was just a table with a radio presser. Until the cat jumped off. Then you could see it."

"Can it jump off? asked Miss Knox.

"Can it jump off? Did you ever see a cat that couldn't jump? And that's not all—"

"Quite a trick," she said.

"No trick. You could rule the world with that, ladies. Think about it. Rule the world. Got a cigarette? After all, I always get you coffee."

She handed him one.

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Miss Erwin stared across the river. "I hope it isn't a new kind of bomb," she said.

Boney pulled out a stick match and struck it on the stone lion. Cupping his hands around the flame, he lit up and walked away.

"BUT, Dr. Brooks, when you tell Boney things like that," said Miss Knox, "he believes them, and he quotes you like mad. Don't you care about your reputation at all?"

"My dear woman," Dr. Brooks replied, "I've been interested in many things in my years, but getting my portrait in the Mushroom has never been one of them—"

Mr. Barger's legs spasmed suddenly and shot straight out, jerking the covers from his fat-layered neck. But the pink shut eyelids hadn't quivered.

"— and, anyway, Boney is right," Dr. Brooks finished. "Why do you think the Royalties want government control of the whole invention?"

Miss Knox was tucking the covers around his warm, sticky jowls. "But he said you said—"

"I said she said we said." Brooks grabbed her chin between his thumb and forefinger. "Did you know that machine on the Silvertongue roof could get at us inside our own homes?"

She shook her head, swinging his arm from side to side.

"If you know nothing about it, girlie, let me explain." He squeezed her chin tighter. "You saw those two men from the Christian E. Lodge Corporation — Silvertongue, that is — who came this afternoon to see Barger? The ones on motorskates?"

"They shouldn't allow those buzzing things in the hospital. They make more noise than a whirlybird." She backed away, tugging at the white-coated arm until her chin was released. "I mean I saw them yesterday. They tried to get in the bird. I don't know why *they* visit him — he can't say a word. Doesn't he have a family?"

"No, but the Silvertongue men love him like a brother. Barger designed their radiocompressor — the one in all the newspapers. Here, you can see it from the window if you—"

"I know, Dr. Brooks."

"Do you know what that machine can really do, girlie?"

"When I was your age—" Miss Knox began.

"You are. I just *look* young. That machine can cure and shred tobacco with supra-short waves on a polished magnesium bowl, just the way the papers say, but they have cheaper ways to process their tobacco. They really use the machine for guided tours of the factory. Public relations."

"You mean float visitors through the air?"

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"No. You'd need the power of ten maritime atomic piles in series just to lift Dr. Gesner to the height of—"

"Very funny!"

"— his own square root. What they can do with that machine is to disguise an object — say the incoming leaf tobacco. They can make it look firm, golden, and so forth. The girls at the sorting tables, wherever the guided tour happens to be, will all look like Norma Norden. They'll be dressed as angels and work in heaven. Then the V.I.P.s can tour the girls' homes and dormitories, and instead of a dirty slum, they'll see — they'll see *mushrooms*, if they like."

"How is it done?"

"Only Barger Electronics really knows," said Dr. Brooks, "and the Christian E. Lodge engineers. It's something to do with compressing the wave length to approximate that of light, so that images are canceled out. This leaves a clear field for subliminal techniques. If there are subvisual images projected on the walls, for instance, that's what the observers will see inside the room."

"Oh, my God!" exclaimed Miss Knox.

"The only other thing I know is that it has to be done with intersecting spheres. The machine has two portable secondary transmitters — or projectors, or whatever they call them — each emitting in all directions to form a wave-sphere. Where the two spheres overlap, you get your possible interference with light."

"Frankly, I just don't understand it."

"Any radio waves go out in all directions to form spheres." His voice had become a mutter. "You know that."

"No, I didn't."

HE gave a false sigh. "Well, take an ordinary weak phone transmitter very high up in a whirlybird. That's the simplest case. You know what sound a whirlybird makes, don't you?"

"Of course," said Miss Knox.

"What?" Dr. Brooks challenged, moving at her. "How does it sound?"

"Oh, clatter-clatter chug-chug," she said, moving back.

"No. Listen closely and you'll hear any whirlybird — especially hospital ambulances — go *rackety-rackety-rack groundhog, rackety-rack groundhog!* — a reminder to people that they belong on the ground, one may assume. Picture a microphone attached outside the bird and wired to your transmitter. The radio waves go out in all directions through the air. Suppose your air is all of the same density, and so forth — then all the waves peter out at a constant radius and form a perfect sphere going *rackety-rackety-rack ground-hog!*

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"Now compressed waves travel a certain number of feet — theoretically, the number of foot-pounds of work the power input could perform modified by a constant value called 'e' — and at that point they revert to ordinary radio waves. This forms a sphere of compressed or supra-short waves. Do you understand that?"

"No," said Miss Knox.

"Well, anyway, where two spheres overlap, you get the Barger effect. And they can vary or limit the effect in interesting ways. Just move one or both projectors so that the waves intersect each other in different phases—"

"That's a fascinating way to back me into a corner of the room, Dr. Brooks. Now will you please let me look at my patient?"

Mr. Barger's body convulsed and twitched, and the disordered bedclothes exposed the pink, swollen layers of his throat. Only the face slept. Miss Knox reduced the feed on the water envelope, and with her palm brushed drops of moisture from the burning, out-of-focus pink skin. The drops were sticky and warm. She wiped her hands on a piece of cotton and started to prepare the blood transfusion.

"Before you get out of here," she said to Dr. Brooks, "let me thank you."

"For the information? You'll only forget it."

"No, for the crack about my age."

Slumping his eyebrows, he went to the door and stepped through almost before it could slide open.

"Wait!" she commanded in a stage whisper.

He appeared, the door sliding back harmlessly against his shoulder before it changed direction.

"What's so terrible?" she asked. "You talk as though that radio-compressor on the Silvertongue roof were going to destroy the American home, at the very least."

"They don't just have to transmit within the factory," he said. "Suppose they wanted you arrested. Say they didn't like brunettes. Well, first they get some dame to call police and say she's going to do a strip in front of the Psychiatric Pavilion wall. Then they go across First Avenue and set up a subliminal movie sequence of some stripper in action and focus it on the wall from their car. They set up two portable wave projectors and adjust their phasing to achieve the Barger effect in that one place. Then they wait for you to pass that spot on your way to church. Very little power is required; the actual radiocompression takes place across the river."

Brooks raised his pants from the knees and minced across the room, exposing curly hair above his fallen argylls. His white coat

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twitched from side to side. "Now here you come. A man watching the street from the broken stool at the Green Gables twists one of his cufflinks, or maybe he just whistles. This starts the projectors and you become invisible, or very blurry, while the subliminal film gives the cops what they want. Then the whole thing shuts off and the cops can see *you* again. You're hustled off to jail and they keep you there — along with other enemies — by making a similar visual 'fix' on the results in some polling place and putting in their own judge!"

"Oh, they'll probably just use it for advertising."

"Sure," said Brooks. "How would you like it if you were watching television with your roommate, and all of a sudden she turned into a giant pack of Silvertongue cigarettes?"

WATER dripped on her palm, leaving a red stain. A ringing, ringing, and the whir of motor-skates receded down the corridor. It rang and rang, her hand sticky and warm against her cheek. It rang.

The telephone. Trying to recapture something she had known, she let groping fingers stretch toward the instrument. They descended, clenched, lifted. The ringing stopped.

She forced her eyes open far enough to see her white arm return. Hunching up around her pillow with the receiver, she croaked, "Hello."

"Miss Knox?" A high voice. "Boney — it's Boney—"

"You have a nerve, Boney, to wake me up at this hour."

"This isn't Boney — it's Hilda Erwin. I'm on emergency duty and they've brought in Boney. His throat is cut—"

"*No!* Is he alive?"

"Yes, yes. But he may never speak again. He lay there in the street for hours and hours. Dr. Gesner's internes are here—"

"Oh, not being able to talk would be worse for him than dying. I'll come! I'll be right there!" Miss Knox dropped the receiver and swung out of bed, feeling in the darkness for her robe. She pulled it on and opened the door, and found her slippers in the faint yellow light from the hallway.

As she ran, knotting the belt of her robe, she looked up and down the ancient residential corridors for a motorbed. She stumbled against a rotten wood molding. She pressed the elevator button and turned, her loose hair swinging heavily, to face the flat eye of a clock. It was five-fifteen.

Overhead, the floor indicator creaked around its dial — seven, six, five, four — and the doors opened. There was a motorbed on the elevator.

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She stepped inside and pressed the button for seven, the lowest floor with a bridge to the Mushroom. The doors shut and the car moved upward. Tripping over the torn linoleum, she managed to fall backward onto the bed's driving seat. She swung her legs around and turned on the switch.

As the doors opened, she drove out with a jolt and entered the sparkling newness of a tubular bridge which rose through the night across First Avenue. The Mushroom towered overhead, its spiral corridors glowing. Night traffic vibrated beneath her as she crossed — a crowd of trucks was baying north along the hidden cobblestones, following traffic lights which jumped from red to green, one after another, like an electronic rabbit. The trucks passed out of sight under their own diesel cloud and another pack approached in a higher key . . .

Then a lurch as towing cables grated and took hold in the curve of the many-windowed corridor. Whining under glass, the motorbed veered off in a rising circle around the stem of the Mushroom. Around and around again, faster, while room numbers flashed red one by one on the silver doors, over the river, over the roof garden of the Administration wing, over the river, over the garden, around and around and out, out — far out over a city of dark crumbling toys and up and up over the rim . . .

SHE approached the great transparent dome of the Mushroom looking ahead into the sky, as though enemies in immense distance were triangulating upon her. An echo of voices rolled out. Far across the marble floor, one of the emergency rooms had its lights on. The door opened and a tiny figure in a motorchair sped out and along the wall, followed by a line of running dolls in white. Some of them clustered around the man in the chair, waving their arms. Thinning like a comet's tail, the procession vanished down the south escalator. The door of the room slid shut.

She hurtled across beneath the stars and drove straight at the room, applying brakes sharply with a tightening in her stomach as the door began to open. Her long hair swept forward against her cheeks and shoulders. She jarred to a stop inside and rose, refocusing her senses on the enclosed white space.

The bedside table held a pot of paper geraniums. Something lay beneath the covers like lumber on edge, the angles of knees projecting sideways. Out of the sheets stuck part of a thin white drainpipe neck and a face like a broken roof shingle, over which the weeping Miss Erwin cast her shadow.

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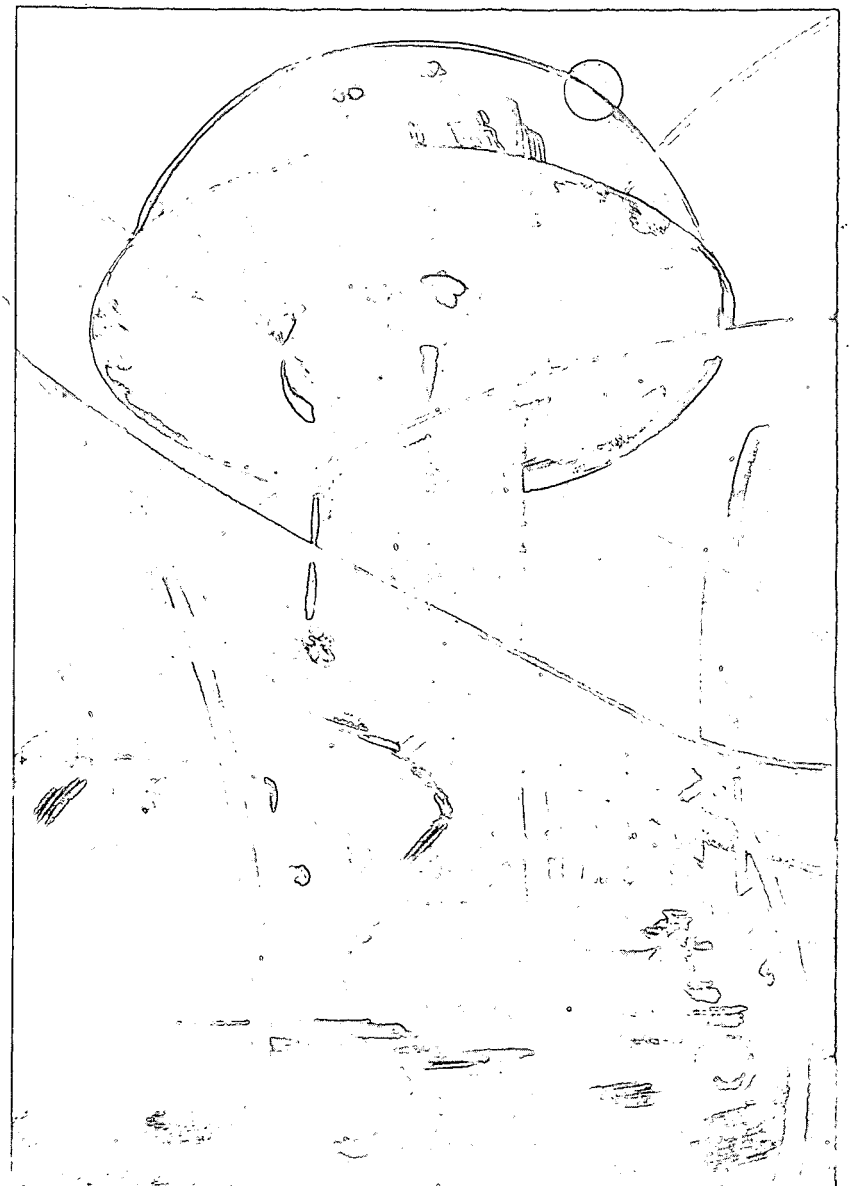

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Brooks sat hunched over the stool, fingers buried in his hair. His lab coat was twisted awry; a bare knee protruded between two buttons.

"What happened? asked Miss Knox.

"He's all right," Miss Erwin sobbed at her. "Delinquents—vandals — they cut his throat by the river, right in front of the hospital. The mutape says — he didn't — see their faces."

"Don't worry about him," said a low muttered voice. "He's been conscious. The doctors say he'll speak, in time." Dr. Brooks had raised his head and was trying to cover himself with the lab coat.

"River rats," Miss Knox snapped, peering at Boney's wasted face. "What do you mean, in time?"

"Two or three weeks. An expert job of quick surgery, really."

"No! No!" Miss Erwin broke into a fit of sobbing and blindly rearranged the flowers.

"Do you mean to say?—"

"Some medical students on a horror spree. Damned age of — what did that Washington press secretary say? — 'atomic hyperspecialization'! That means young brains growing in channels until they explode through the wall. You remember the physicist who killed his colleagues when the English won the Nobel Prize."

"It can't be," said Miss Knox. She watched the hurt man grimace somewhere along his razor edge of nightmare.

"It's the only likelihood. Well, we can't do anything for him now, and you look a little beat. Come on, I'll buy you coffee from the vending machine on the Administration roof."

Dr. Brooks stood up, lifted Miss Knox gently beneath the arms and sat her on the motorbed, then swung a hairy shin over the driving seat. They rolled through the doorway.

"Who was that big shot in the motorchair?" Miss Knox asked. "Dr. Gesner?"

Dawn had just begun to spread. They crossed within a widening circle of mushroom-shaped arches containing portraits which drew farther away until they resembled portal guards, and then converged again in full austerity on the opposite side of the great dome.

"Director himself — they can't reach Gesner anyplace," Brooks said.

THEY started to descend inward from the Mushroom's edge. Numbers flashed by as they spiraled down faster along the self-steering guide rail. Over the river, over the garden. Over the river . . .

She leaned back against the pillows. "What was himself doing in the hospital at this hour?" she asked.

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"As a matter of fact" — his shadow crossed her face as he moved the deceleration lever—"he was with me."

"With you?"

"I was listening to the newscasts in bed. He came to see me because, as resident radiologist, I'm the only person who knows anything at all about electronics. While we listened, his assistant with the high voice called him on my phone and told him about Boney."

"How did he react?"

Brooks swung his tiller bar and they veered onto the roof of the Administration wing, the door behind them cutting off all light from inside the Mushroom. They were in a formal garden filled with scent, and surrounded by distant hedges. The few remaining stars were surprised naked, floating above a monstrous concrete birdbath.

"Like a bureaucrat," he muttered as they rolled to a stop. "First he requisitioned flowers. He's probably in here somewhere now, plotting revenge against the Commissary clerk who issued the knife they found near Boney. I know he'd love to see you rushing in your bathrobe to other people's emergencies."

"Disgusting. And they call him the Father of the Mushroom. Big shot."

"Why?" he asked. "After all, he *is* a bureaucrat. How did you yourself react — like a woman, no?"

He helped her down. They walked within a double row of mountain laurels to the coffee machine.

"I'd forgotten all about the bathrobe," she said. "Black for me."

"One day soon," he muttered, "they'll build him a mushroom he'll never see the end of. Sandwich? Anything?"

"No." She took the warm plastic cup and sipped. It was bad coffee. Far below, a snort of traffic echoed down First Avenue. "I've only been here once before. I'm a bit lower-echelon for the Administrative roof."

"Who isn't?"

She looked past the white-on-red Emergency Exit sign to a wrought-iron gate in the hedge facing the river. "Look, the Silvertongue factory is all lit up. Every single window on the top floor."

"I should think so. You mean you don't *know*?"

"Know what?"

"My heavens, the fate of man's grasp on reality is being decided tonight! Congress was still in special session at five A.M. — still is, as far as I know."

"Session over what? Don't tell me the bombs have started."

"Visual interference by radio wave compression. Yesterday the Royalty called an immediate special session. There is at present *no*

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law to prevent the Christian E. Lodge Corporation from buying the right to tamper with light waves in the home, for advertising purposes or — God knows what other kinds of control."

"I didn't know. I was on duty with Mr. Barger and then no one told me."

"Barger was against it," said Dr. Brooks. "He sold them the device with a set of conditions on its use, but now they're buying the patent outright."

"But — don't they have to wait for him? Barger Electronics is his company."

"No. He's chairman of the board, but any three or more directors can sell the patent. Once it's sold, there will be nothing Congress can do."

"Why?" asked Miss Knox, staring out over the water. Some of the Silvertongue windows had winked out. The others vanished together, leaving only a pale vertical row to mark the fire stairs.

Three bells sounded.

"Your attention please!" — a piping male voice.

Brooks said, "I'll bet it's the Director himself."

"In a moment," shrilled the voice, "we will tune in the broadcast direct from Washington so that all personnel can hear history in the making. After the congressional vote, Dr. Hamilton, our director, will honor us with a few words here in the hospital, which he will repeat later for the benefit of the day shift."

There was a ringing tone, growling in volume like the approach of motorskates.

"I told you," Brooks shouted over the noise. "His family has stock in Silvertongue."

". . . been informed that a purchase has been completed of full rights to the Barger Radiocompressor. I warn you that this device will be used indiscriminately against the public interest." The voice was strong but unsteady. "Barger engineers have been withdrawn. There are no controls—"

"Too late," said Brooks. "That's Thorpe of Louisiana."

"Bear with me now. I do not doubt that visual interference is already being used to disrupt this session of Congress. Do you understand? I have a blinding headache, brought about externally, I am quite certain. I can no longer read the notes in front of me. If what I say is still sense, I insist I want a vote, immediate vote, to make this thing illegal — illegal, and let the New York City police or the Militia or the Army — the Army . . ."

IN sudden silence, she clung to Brooks' sleeve.

"Ladies and gentlemen," said the piping voice from within the hospital, "the House of Represen-

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tatives is still far from approaching a vote. We will tune in debate on the Senate floor, being broadcast by another network."

". . . alleged that Patent Number 90,732,440B has something to do with national safety. I assure you, gentlemen — ladies and gentlemen — that American business ethics will prevent such dangerous use of technology now as in the past, and that any weapons application will be confined strictly to that sphere where weapons are themselves a safety factor — the sphere of national defense against foreign aggressors.

"It has further been alleged that there is some connection between Patent Number 90,732,440B and the hospitalization of Mr. William Barger of Barger Electronics Company, Incorporated, who is currently afflicted with"—the Senator breathed a chuckle — "laryngitis.

"It has even been supposed by certain Senators that the non-fatal stabbing of Nathan Bonaparte, a part-time employee . . ."

Silence.

"Ladies and gentlemen," the voice from within the hospital said, "we will tune in again when the matter is brought to a vote. And now — Dr. Hamilton."

A long pause filled with buzzing.

"People," said the Director, and the buzzing ended. "There is no war. Let me repeat: there is no atomic war going on." He paused.

"Now there has been a lot of fuss over a steel tower on a factory across the river. I want to make it clear that no advertising gimmicks will change our job here. All hospitals — public, like ours, or even our esteemed allies, the private hospitals — are bound by medical and staff ethics to pay no official attention to the world of advertising.

"I am especially amazed by rumors that Nat Bonaparte, or 'Boney,' who does clean-up work here from time to time, was silenced because he 'knew something' about this wonderful advertising gimmick. Nothing can be sillier. It just happens that the fellow left *my* office shortly before he must have been wounded by delinquents from the nearby slums. He was giving me 'inside information,' as he called it, about light-ray guns, and mechanical hypnotism, and plots against the patients. These, apparently, are the things which Boney 'knew,' and he has been talking endlessly about them since I first came into office, and presumably before."

Brooks struck two cigareettes against his pack and handed one to Miss Knox. Their first puff obscured his puzzled frown.

"This *fuss* I am talking about," continued the Director, "has been taken as grounds for wild infringement of any and all regulations by

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personnel of this hospital. I want it made perfectly clear that motorbeds not in official use should be stored in the proper supply rooms, according to the chart in the Commissary office. We are setting up a daily check-in system—"

"Let's get out of here," said Miss Knox.

"— to prevent further misuse of this equipment."

"Get on the bed," said Dr. Brooks. "If they saw you go up to Boney, we can't leave it here."

"*Furthermore,* any private or unauthorized use of this or other hospital equipment may be punished by immediate dismissal—"

Miss Knox took a step toward the motorbed. "I'd like to look in on Mr. Barger."

"—with *particular* application to the young woman who used a motorbed tonight to visit a sick friend."

Miss Knox stood feet apart, hands on hips. "The dirty son of a bitch," she said.

MISS Erwin came running across the Mushroom, white pumps clacketing half off her feet. "Oh!" she said, and stopped, panting. "Has the world really been taken over by admen?"

Brooks stopped the motorbed. "Just America," he said, "and only a few admen." He helped Miss Knox down and they all walked toward the emergency rooms.

"Boney is fine, Dr. Brooks," said Miss Erwin. "He just went back to sleep. But Mr. Barger is not feeling well."

"Is Mr. Barger awake?"

"Oh, no, Doctor, but he was moaning. A sort of breath-moan, with his eyes still shut. Dr. Feld took a mutape and said he wasn't getting regular delirium patterns at all."

"Has Dr. Gesner been here?"

"We've tried and tried to reach him, but he left no word with his office or at home. His nurses are terribly worried about him, and his wife — oh, Miss Knox, do you suppose he drinks?" Miss Erwin's forehead grew a splotch of pink. "*Oh,* I'm sorry, Doctor! I'm terribly upset."

"Go home, Hilda," said Miss Knox. "I can handle things — I go on in less than an hour, anyway. Let's foul up Hamilton's schedule."

"Oh, Miss *Knox!*"

"Just one more thing — before you go to bed, get a uniform from my room and give it to Miss Kelly, to bring with her when she comes up for day shift. If my door is open, close it."

"Here's a key." Dr. Brooks said. "Give it to one of the attendants in the dining room. If no one's eating breakfast yet, leave it with Old Man Mackey. Say that I want some linens and a suit — any suit — brought up for me

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when the shift changes. Not before."

"What color socks, Doctor?"

"Any color."

"Thanks so much," said Miss Erwin, backing toward the escalator.

Brooks muttered, "The Mushroom doesn't suit her looks."

"She's too young," said Miss Knox. "What's-his-name who designed it — you know, the one who did the museums — was ninety-four."

"He's still designing," said Brooks.

"Can I do anything for you? Preferably against regulations." She watched him lock the door and close the viewplate, and rummage in the manila folder at the foot of the bed.

"I don't know what's wrong with these people," Dr. Brooks muttered.

"What is it?" she asked over his shoulder.

"They've gotten their tapes crossed! That idiot Feld must have had this in his machine when he came. It's some accident victim's tape — one hundred per cent unverbalized pain, and the victim was *wide awake* when he made it. It might be Boney's tape. This man here has been in coma since this — since yesterday morning, thank heaven."

"Poor Boney," said Miss Knox, adjusting Mr. Barger's covers and her own loose hair. As though in answer, Mr. Barger stirred feebly, raising his arm.

"Honey, there isn't much we can do," said Dr. Brooks.

"You're right." She glanced down and plucked at the bathrobe around her smooth lace-bordered throat. "Can't save the world in my old nightgown."

He took her by the shoulders and bent his head toward the palpitating muscle in her throat.

Leaning back against the edge of the bed, she held him at arm's length. She wet her lips and said, "Did I tell you I'm supposed to wear glasses?"

He sprawled forward into her embrace. Her dark mane tumbled thickly over Mr. Barger. They twisted and pulled each other down to the floor, freeing loose strands of hair from the blanket's electricity.

SHE opened her eyes and saw a flat briefcase with a coil antenna sticking out.

"What's the matter?" whispered Dr. Brooks.

"On the bottom of the bed!"

He pressed his cheek to the floor and examined the under-carriage of Mr. Barger's motorbed.

"Projector!" He reached in and tugged at the object, bracing his other hand against the driveshaft. "Help me, quick!"

She grasped smooth leather and pulled, her nails making scars, as

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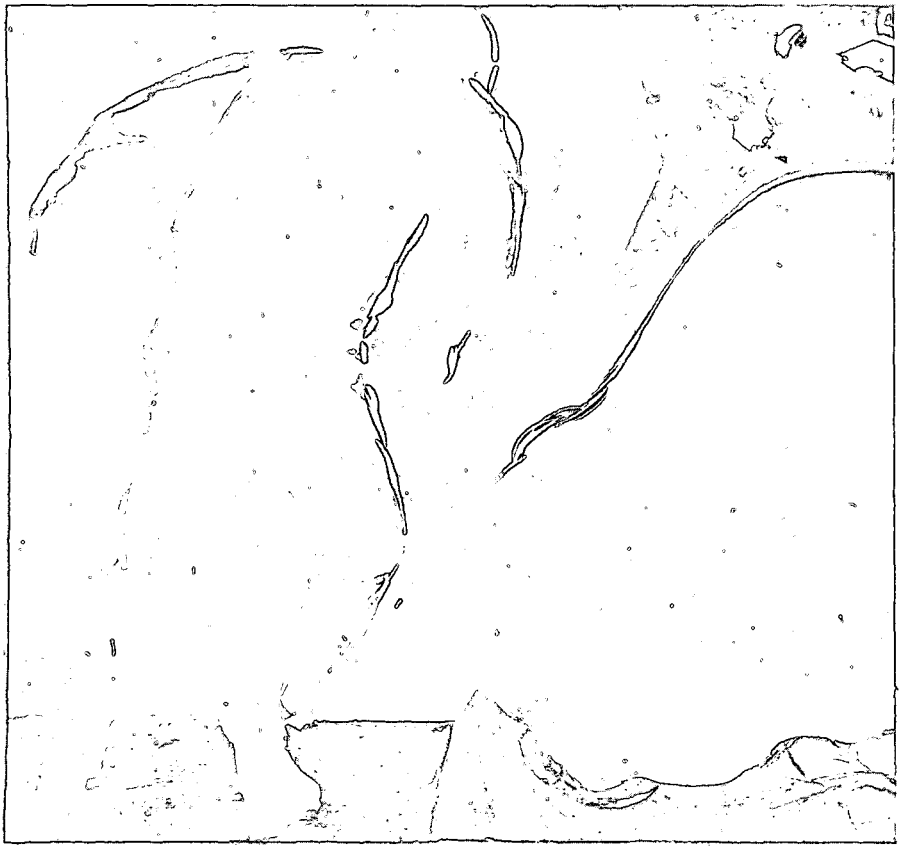

he slid under the bed and hammered with his fist. "It's hooked on the other way," she said. He pulled, and the briefcase fell heavily to the floor.

Dr. Brooks rolled to his feet, kicking the object into the light, and yanked at its buckles and straps. "My bag is somewhere near the chair. Get the mutape on him, fast!"

She found his black satchel on the floor, plugged into the computer outlet and spread the apparatus over Mr. Barger's bed. She made a trembling fist around the Broca cup, and watched the dormant pink cheeks and eyelids

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as she lowered the cup toward his skull.

The rubber rim thudded against empty air, pleating like a horse's muzzle as she pushed. The sleeping Barger face remained a picture glowing out of reach inches beneath her straining fist, behind a smell of blood. A hand from under the covers grasped her wrist . . .

She struggled. Dr. Brooks, at the telephone, contorted his face and heaved the briefcase against the wall. It shattered into coils and smashed tubes and pieces of electronic chassis like a shower of silver Christmas ornaments, and a moan from the bed faded away.

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Brooks shouted and hung up the phone. The mutape was chattering violently. He unlocked the door, flung himself to the bed and took the recorder between his hands. The grasp on her wrist relaxed, and she leaned over to decipher the punched tape as it unrolled from the machine. Its dot patterns were unverbalized bloody agony, cleanly formulated in computer language.

"He'll verbalize," Brooks said. "Just don't look at him — thank God they've found Gesner."

A red, bloated forehead above eyes fixed on her own through lenses of gray fluid as it writhed and pressed up against the Broca cup in her fist. She covered her face, and between her fingers the sleeping Barger face still lay on its pillow.

DR. BROOKS screwed his own features into a wink, and she turned away to watch the unrolling tape still chattering between his hands: "England is the only hope. We must go through immediately before direct control and defenses build against us — morphine, why did you not give me morphine? Pain is intolerable."

"Analgesics nullify the Gesner shots," Brooks said.

"Morphine," chattered the tape, "worth it, worth it, cure me when we have left for England. And hurry, they want me alive, and as soon as they control the police..."

Turning under Dr. Brooks' twisted glance as he took the Broca cup, she went to the sink and scrubbed her hands. She found the hypodermic and phial in the black satchel and measured two cc of clear tincture of morphine, and turned back to the arm which grasped Dr. Brooks' wrist, pressing the cup hard against a swollen red mass. She rolled up the sleeve of the hospital gown which led to a raised shoulder (she wouldn't look at the face) and hesitated — another needle was already stuck in the muscle, protruding just above the skin. She found the vein and pushed the plunger in, and withdrew her needle.

Dr. Brooks said, "Get that out of there."

She took tweezers from her bathrobe pocket and carefully removed an inch of broken hypodermic shaft. The blood spurted. She reached for cotton and alcohol.

Three bells rang in the corridor as the door slid open, and Miss Erwin came fluttering in.

"Don't look, Hilda!" warned Miss Knox.

"Calling the emergency rooms," said a piping voice. "Beware of patient William Barger who may attempt to escape. He may be armed . . ."

The mutape chattered.

"Here, take the cup," said Dr. Brooks. He picked up the bedside

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chair and placed it on the foot of the bed. Climbing onto the swaying surface like a trained ape, he reached up and loosened the screws which held the light globe in place on the ceiling, and threw it to shatter on the floor. Miss Erwin stepped backward. Then she tiptoed toward the light and steadied the chair, and stared at the patient's face in fascination. Dr. Brooks was tugging at an object resembling a camera, attached by a spring clamp between the bulbs of the ceiling fixture.

"Hilda!" Miss Knox said.

"Oh, look at his face now!"

"Subliminal picture slide," said Dr. Brooks, dropping the object to the floor with a crash. "There goes his sweet sleeping face — an illusion filling in for reality *because there was nothing else for us to see.*"

Mr. Barger's face was blotched red and covered with shiny ooze. His throat was swollen as thick as his cheeks, with lumpy rolls of neck stretched taut like strands of pink beads above the bedsheet. His mouth was hidden beneath caked blood.

The mutape read, "You are running out of time."

Three bells in the corridor as the door slid open. "Calling Dr. Gesner," said a cool nurse's voice. "Emergency. Calling Dr. Feld. Emergency."

Five internes scurried in, surrounding the figure on the bed. Behind them strode rawboned Dr. Feld in a red hunting jacket. A motorchair rolled after him and stopped in the doorway, and an assistant administrator stood up and piped, "Hold him! He may be armed!"

WITH the mutape chattering and Dr. Brooks bent close over the recorder, Miss Knox stood up and prepared her needle with penicillin from the black satchel.

"Don't kill him," the administrator whined.

Three bells in the corridor. "All personnel," said the nurse's voice. "Day shift, please take notice. Beware of a patient, armed, seeking to escape from the emergency floor. All hospital personnel. Beware of a patient . . ."

Big Carl kicked the motorchair out of the doorway, stepped through and handed Dr. Brooks a blue serge suit on a hanger. After him came a nurse carrying a white uniform and a paper bag. The room was filled with an echo of voices spreading across the Mushroom.

"Step back," said Dr. Feld, stumbling over an interne.

Two student nurses came to the doorway and stood on either side, one with her hand in the photocell beam to keep the door from closing. The noise grew.

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"Calling Dr. Gesner," said the cool nurse's voice.

A group of internes shuffled inside, faces averted, moving sideways in the crowd around the bed. Two attendants came striding up and stood on either side of the door, next to the student nurses.

A class of medical students filed in and moved along the wall, the taller ones standing on tiptoe to see the patient. A bearded professor in tweeds followed, whispering, "Here he comes, here he comes."

After a pause, Dr. Gesner waddled through the doorway between his nurses. Three internes came after with white coats flying open, the middle one a Hindu in a blue sash, and then a messenger boy calling, "Telegram for Dr. Gesner!" Three bells rang in the corridor, and the door slid shut.

A path cleared before Dr. Gesner as he made his way to the bed. Helped to a sitting position, he opened the telegram which had been passed from interne to interne.

"You don't mind," he said, turning to the patient's bloody face. He read the message and threw it away. "The police have been holding me for two days. Here my lawyers have a nice case against City Hall, just when this England business comes up — so you're the man who's dangerous and armed! I'm sure Hamilton isn't responsible for that story."

Dr. Gesner had removed some of the cake with Miss Knox's tweezers and was prodding the lipless inflammation.

"Wash this off as gently as you can," said Dr. Gesner, and Miss Knox stepped forward. "And the antiseptic ointment in my bag — it has a purple label."

"I had to give him morphine," said Dr. Brooks.

"Ah — and some antibiotic?"

"Penicillin," said Miss Knox.

"Ah. Now tell me, where is this other man who was put out of commission by these—these throat specialists? I'd like to examine him."

THE mutape chattered suddenly and then stopped. Dr. Brooks bent and read out loud, "Get those two on motorskates! I know them. They appear blond with their projector fields turned on; otherwise they are both narrow-faced and dark."

Dr. Gesner smiled with just the middle of his face. "We caught them in the lobby on our way in. One of my lawyers is coming with us. His son plays right tackle — young lady!" He looked straight at Miss Knox. "I understand you've been talking about this business for days, along with our friend with the cut throat. You've been in danger — those two men were still in the building on your account, I'm sure. It's a very good

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thing you weren't alone, you or Dr. Brooks. I take it you were both on night duty."

Dr. Brooks said, "If any of the nurses or Dr. Gesner's students don't know what this is all about, I'm sure he'll make an announcement when we're all on the way to England. You must have *some* idea of what's happened. If anyone doesn't want to come, of course—"

"Treason and insubordination!" piped a hidden voice. "Under the circumstances, Dr. Hamilton will have you jailed when he finds out what you're up to, Dr. Brooks."

Brooks stretched his arm between two students and pulled a switch on the wall. The ceiling began to open, sweeping bright sunshine down the wall and making metal buttons twinkle on Dr. Feld's jacket. The ceiling slid back on rollers with a rumbling sound, until nothing was overheard but the black dots of aircraft rising toward the sun. Nearby, a whirlybird took off with a *rackety-rackety-rackety-rack!*

"I phoned the Director," Dr. Brooks told the crowd. "He's not interfering. In fact, I'm pretty sure Dr. Hamilton will come."

"Dr. Feld," said Dr. Gesner, "will you show the adman out?"

"I'm not—"

There was the sound of a blow and the assistant administrator appeared, scrabbling for his motorchair, which was buried among the students. His spindle limbs flailed from one side to the other until he was propelled from the room at a run, screaming, and the messenger boy vanished after him. Three bells rang in the corridor as the door closed.

Dr. Gesner raised his hand and voices were stilled, the shuffle of feet ended and the mutape chattered alone in the sunshine. He leaned over and read the tape, and as he straightened his back, even the recorder stopped still. He heaved himself to his feet with the help of two internes.

"He says—" puffed Dr. Gesner—"he says this is no time for sadism."

"LAST ones up, girlie," said Dr. Brooks.

She sat on the bed and the mutape spoke to her noisily. Big Carl had hooked two cables in place, Dr. Brooks the other two, and the floor platform began to rise through the room toward the maw of the hovering whirlybird. She tucked the covers gently around her patient's distorted throat.

The chatter stopped. She read, "This is something the Royalty predicted for weeks ahead of time. I thought we could avoid it, but the Silvertongue people must have fed me the virus at our last luncheon meeting. Then when negotiations remained uncertain — thanks to Royalty sentiment on

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my board — they came visiting while I slept and injected me with a larger dose and planted the projectors. I woke up in awful pain. You were there, young lady — I screamed, silently, with my features. I was unable to raise my head. You wiped blood from my cheeks with your palm and cleaned it on a piece of cotton. You thought it was under water. Your eyes turned away before your hand left the projector field — or else you could not see what you could not expect. While I looked on, you treated me like a sleeping baby and asked Dr. Brooks about radio . . ." The perforated tape had stopped feeding from the machine.

"His tape!" she cried.

"Don't worry," Dr. Brooks said. "We're unplugged from the hospital system, but I reserved the only ambulance with its own computer circuit. It conveys limited ideas, but that's better than nothing."

Big Carl had erected the safety gates. "Look below," he said.

She stood up and pressed her forehead to the latticework of the nearest gate. At first there was only a diamond-shaped patch of sky, with the Silvertongue factory in the bottom corner. Then, as the platforms swung on its cables, she saw the curved edge of the Mushroom, and the Administration roof swarming with figures on motorskates. They circled among the squat mountain laurels, pointing upward. The ambulance walls settled around her suddenly blocking the view, and the belly of the vehicle rumbled shut. With a bump, the floor platform was deposited on its girders.

Dr. Brooks said, "We're away — I'll have the pilot phone the others!"

"Where's the socket?" Miss Knox asked. "Mr. Barger and I were talking."

Dr. Brooks plugged into an overhead beam and the mutape immediately began to chatter: "What is your first name, Miss Knox?"

"Della," she said.

"Pete Brooks."

"Carl," the big man growled as he folded the gates.

"Call me Bill," said Mr. Barger's tape. Mr. Barger's square hand motioned her closer beside him. "Della, do you know what we must do when we reach England? We must use the atom bomb first, before the admen have full control. Only then may we return to the America we know. The real America."

"Do the English know?" asked Miss Knox.

"Of course," she said. "They heard the broadcasts, and their scientists understood. They have supported our Royalty Party for years. I think I could increase the

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range of my device and reach America before they reached England — but there is no time for that. The world must unite against invasion. Even the Russians know that there is no limit to the scope or methods of greedy marketing specialists"—the machine punched out a pattern of giggles and chuckles — "and I doubt if the Russians could ever invent a radiocompressor."

"Are *all* the admen part of this?"

"Absolutely not, young lady! The very great majority has always followed a strict code of ethics that the very small minority has always subverted. Many ethical admen are in the birds now, on their way to England — knowing perfectly well that England is poor territory for emotional salesmanship."

"But why a Royalty Party in a democracy?" Miss Knox asked.

"Royalty—" The tape showed amusement. "Not aristocracy. Royalty, as in share of and control over. Motto of the Royalty Party: 'The inventor is worthy of his invention,' meaning the right to say how his discovery shall or shall not be used — or not be used at all, if it can only be destructive— as well as sharing in the proceeds. Unreasonable attitudes are not possible; we have an Appeals Board that can overrule a pigheaded patentee. Radiocompressors were intended for beautification of environment, not deception or thought control."

"Why England?" she persisted.

"Pretty generally, the Royalty code is and has been standard procedure there. Like their constitution, it hasn't had to be put in writing."

"Aren't there slums and unsightly monuments in England, too?"

"Of course. Why do you think they would like to have the invention? But it's safe there; it won't be subverted to thought control and sales engineering . . . Tell me, Della, is Dr. Gesner on this ambulance? I would like to meet him."

Dr. Brooks had come back from the control room. He sat beside her on the bed. "Dr. Gesner went ahead with Dr. Hamilton," he said, "because you're healthier than either one of them. But, Mr. Barger — Bill — doesn't light-wave interference need two overlapping projectors plus the subliminal image? We only found one."

The recorder chattered: "I am sure the other is also somewhere in the bed. It is harmless by itself, and I am glad we have it — it will help me instruct a team of British physicists and engineers. But who is in the other compartment? I hate to play chess with the same people over and over."

"I'm afraid he doesn't play," said Brooks. "I think it's old Boney, who had his throat cut be-

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cause your friends thought he might get you some help too soon."

The recorder punched out, "I would like to meet him," as Miss Knox jumped from the bed, pulling Dr. Brooks by the arm. The machine chattered again briefly and she stopped and read, "Do not neglect me altogether," and ran on. She opened the door to the other bed compartment.

Miss Erwin fell on her with a cuddly embrace, and then Dr. Brooks reached over her shoulder to shake Miss Erwin's hand. "How's the patient?" he asked.

Across the compartment, Boney's face expanded in a three-cornered smile.

"At least he slept," said Miss Erwin. "That poor Mr. Barger — all the time we thought he was in coma, he was wide awake!"

Miss Knox said, "Oh, my God!"

"I HEAR more jets!" wailed Miss Erwin's voice from the other room. "Why are they all flying home tonight, and we have to leave? Carl, are we — are we a quarter of the way to England?"

"No," Big Carl answered.

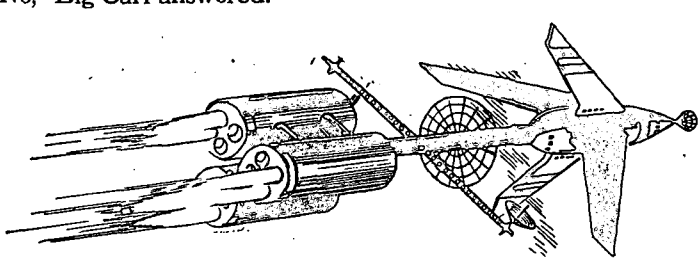
Miss Knox called through the doorway, "This one won't let me open the hatch!"

Hunched across the bed, his hair falling over his forehead, Dr. Brooks played chess with Mr. Barger. "Not in here," he said. "You can open the emergency hatch in back if you like night air. But don't expect to see the bombers — or anything but our own landing gear."

She slid past him and shut herself into the small rear compartment and turned out the light. She felt for the emergency lock and swung her weight backward as the damp black air screamed in and tugged at her face — the whirlybird showed its fat thigh with a *rackety-rackety-rack ground-hog!* Tears ran down her cheeks, distorting her first view of darkness.

Beyond the machine's ungainly silhouette she peered and saw flashes of yellow light on water — but nothing, nothing familiar. Thus, squinting desperately toward home, she noticed it, marking the horizon. A glowing mushroom. It must have been gigantic.

— LEONARD RUBIN



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by FREDRIC BROWN

Emperor of the World? Why be a cheapskate? There was simply no limit to the prospects of the man who had—

THE POWER

THE Power came to Larry Snell suddenly and unexpectedly, out of nowhere.

How and why it came to him, he never learned. It just came; that's all.

It could have happened to a nicer guy. Snell was a small-time crook — when he thought he could get away with stealing — but the bulk of his income, such as it was, came from selling numbers racket tickets and peddling marijuana to adolescents. He was fattish and sloppy, with little close-set eyes that made him look almost as mean as he really was.

His only redeeming virtue was cowardice. It had kept him from committing crimes of violence.

He was, that night, talking to a bookie from a tavern telephone booth, arguing whether a bet he'd placed by phone that afternoon had been on the nose or across the board. Finally, giving up, he growled, "Drop dead," and slammed down the receiver. He

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thought nothing of it until the next day when he learned that the bookie *had* dropped dead . . . while talking on the telephone . . . at just about the time of their conversation.

This gave Larry Snell food for thought.

He was not an uneducated man; he knew what a whammy was. In fact, he'd tried whammies before, but they'd never worked for him. Had something changed? It was worth trying. Carefully he made out a list of twenty people whom, for one reason or another, he hated. He telephoned them one at a time — spacing the calls over the course of a week — and told each of them to drop dead.

They did. All of them.

It was not until the end of that week that he discovered that what he had was not simply the whammy, but the Power. He was talking to a dame, a *top* dame, a stripteuse working in a top nightclub and making twenty or forty times his own income, and he had said, "Honey, come up to my room after the last show, huh?"

She did.

It staggered him, because he'd been kidding. Rich men and handsome playboys were after her, and she'd fallen for a casual, not even seriously intended, proposition from Larry Snell.

Did he have the Power? He tried it the next morning, before she left him. He asked her how much money she had with her, and then told her to give it to him. She did, and it was several hundred dollars.

He was in business.

By the end of the next week he was rich. He had made himself that way by borrowing money from everyone he knew — including slight acquaintances who were fairly high in the hierarchy of the underworld and therefore quite solvent — and then telling them to forget it. He moved from his fleabag pad to a penthouse apartment atop the swankiest hotel in town. It was a bachelor apartment, but he slept there alone only seldom, and then only for purposes of recuperation.

IT was a nice life. Even so it took a few weeks of it to make Snell realize that he was wasting the Power. Why shouldn't he really use what he had? Why not take things over — the country first and then the world — make himself the most powerful dictator in history? Why shouldn't he have and own everything, including a harem instead of a dame a night? Why shouldn't he have an army to enforce the fact that his slightest wish would be everyone else's highest law? If his commands were obeyed over the telephone, certainly they would be obeyed if he used radio and television.

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All he had to do was pay for (pay for? Simply demand!) a universal TV network that would let him be heard by everyone everywhere. Or almost everyone. He could take over when he had only a simple majority behind him. The others would come into line later.

But this would be a Big Deal, the biggest one ever swung, and he decided to take his time planning it so there would be no possibility of his making a careless mistake.

He decided to spend a few days alone, out of town and away from everybody. He had planning to do.

He chartered a plane to take him to a relatively uncrowded part of the Catskills, and from an inn (which he took over simply by telling the other guests to leave) he started taking long walks alone, thinking and dreaming. He found a favorite spot. It was a small hill in a valley surrounded by mountains. The scenery was magnificent. He did most of his thinking there, and found himself becoming more and more elated and euphoric as he began to see that it could and would work.

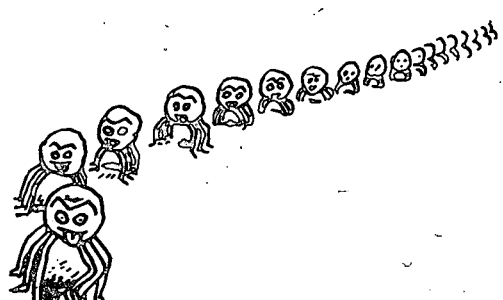
Dictator, hell! He'd have himself crowned Emperor. Emperor of the World! Why not? Who could defy a man with the Power? The Power to make anyone obey any command that he gave them, up to and including—

"Drop dead!" he shouted from the hilltop, in sheer vicious exuberance, not caring whether or not anyone or anything was within range of his voice . . .

A teenage boy and a teenage girl found him there the next day.

They hurried back to report the dead man they had found on the top of Echo Hill.

— FREDRIC BROWN



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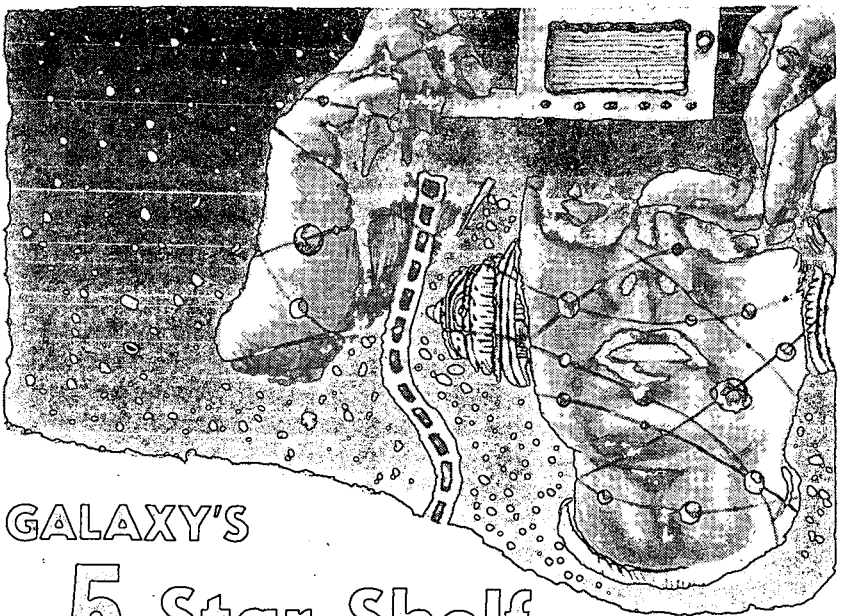

GALAXY'S 5 Star Shelf

ACROSS THE SEA OF STARS by Arthur C. Clarke. Harcourt, Brace & Co., Inc., N. Y., $3.95

WHEN CLARKE'S collection, *The Other Side of the Sky,* appeared, I remarked that practically all of the Clarke shorts worth reprinting in an all-Clarke anthology have been so honored. I never reckoned that Harcourt, Brace would issue an omnibus Clarke and knock my pat statement for a loop.

All the stories are from previous volumes — eight from *Expedition to Earth,* five from *Tales from the White Hart* and five from *Reach for Tomorrow,* along with two excellent novels, *Childhood's End* and *Earthlight.*

As is usual with most Clarke short stories, the last sentence carries the stunner that virtually certifies a ten minute digestive pause between yarns. Prime examples of this shock treatment are "Inheritance," "Encounter at Dawn," and "The Fires Within."

So, although an anthology culled exclusively from previous anthologies perhaps should not be given a separate rating, this bargain giant merits: *****

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THE DUPLICATED MAN by James Blish and Robert Lowndes. Avalon Books, N. Y., $2.95

"I'LL BE looked upon as the ultimate in military plagues," says the man who is to be duplicated fivefold, "the latest achievement in biological weapons."

Later, a key character says, "Is there a real hero? I can find none — or too many." Actually, the multiplicity of prime movers is the aim of the authors.

Venus, colonized by self-exiled revolutionaries and hiding behind a screen that deflects atomic missiles, has been pasting Earth haphazardly with chemical warheads for two generations. Earth, at uneasy peace under Security Council rule, is too civilized to take punitive measures against the aggressors. Hence the intricate plot of infiltration involving the Duplicated Man.

Deviousness of plotting and many thumbnail character sketches enliven the book.

Rating: ***½

WE COME FROM THE SEA, by Hans Hass. Doubleday & Co., Inc., N. Y., $6.50

THOUGH MANY tides have waned and waxed since *Reefs of Taprobane*, our last undersea book, Hass makes up for the long calm.

Hass is one of the world's top authorities on diving with closed-circuit oxygen apparatus. The big advantage of this technique is the freedom from the exhalation bubbles of compressed-air gear that complicate observation. But, regardless of breathing methods, Hass's book is a breathtaking account of several expeditions into exotic waters.

His text and photographs of his encounter with a gigantic whale shark in the Red Sea almost defy belief, as do the equally startling undersea photos obtained of the harpooning of a monstrous sperm whale in the Azores.

The Great Barrier Reef of Australia and Darwin's famed Galapagos Islands also contribute to word and picture.

WHEN THE SLEEPER WAKES by H. G. Wells. Ace Books, N. Y., 35¢

ONE OF the greatest of the true SF classics, this book has been out of print for so long that it is either a nostalgic memory to the older reader or a bare legend to the younger. In my case, thirty years between readings left little recallable detail.

Sleeper is a prime example of the short life of the gadget story. Wells' energy to sustain his complex culture comes from batteries of huge wind vanes. His airplanes are flimsy powered gliders, his

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autos ridiculous toys. His guesses at science to come were so outstripped by reality that today, half a century later, they seem impossibly timid.

The worth of his story lies in its human values. The social problems of the far-from-Brave New World, though based on the black-and white concepts of 19th century Victorianism, make the story the classic that it still is. This is "Young Wells" at his non-Utopian best.

MAN'S JOURNEY THROUGH TIME by L. S. Palmer. Philosophical Library, N. Y.

THE DATE of the beginning of man's inhumanity to man is being constantly pushed further back into antiquity. In explanation: some of the richest finds of human remains have been the gruesome relics of antediluvian cannibal brain feasts.

Palmer's book is not meant for light reading. His purpose is to chart statistically against the backdrop of time the subtle changes, physical and cultural, that gradually led to the first true *Homo sapiens*. Unfortunately, the evolutionary chart is still full of blank spaces. However, as a resumé of current knowledge, the catchily titled volume is exceptional and possibly unique.

A question arises: How far along are we, if we *still* resort to cracking our neighbor's skull to win an argument?

SCIENCE FICTION SHOWCASE, edited by Mary Kornbluth. Doubleday & Co., Inc., N. Y., $3.95

A SAD fact it is, as Frederik Pohl states in his introduction, that this is one of the very few SF anthologies that does not contain a yarn by the late C. M. Kornbluth. But this volume, compiled by his widow and written by his friends, is a sort of memorial.

The roster, fittingly, is strictly big league: Knight, Pohl, Sturgeon, Davidson, Anderson, Bradbury, Dick, Blish, Williamson, Leinster, Matheson and Bloch.

"The Long Remembering" by Anderson and "Mantage" by Matheson, Pohl's "Man Who Ate the World" and Knight's "Ticket to Anywhere" are genuine memory grabbers.

Rating: ****

THE GOLDEN APE by Adam Chase. Avalon Books, N. Y., $2.95

CHASE'S ADVENTURESOME romp is in the rare tradition of the old John Carter tales of Burroughs — at first. The archaically romantic dialogue, the cliff-hanging chapter endings and the monochrome characterizations pour nostalgia by the bucketful over the anes-

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thetized reader. But the clunk of a hero can't begin to measure up to the Burroughs giants.

By the time page 75 rolls around, it is obvious that ERB, wherever he may be, can RIP, certain that his laurels are still intact.

Rating: **

THE EXPLORATION OF SPACE by Arthur C. Clarke. Harper & Brothers, N. Y., $4.50

CLARKE'S AUTHORITATIVE 1951 volume is revised to include the very latest information.

Concerning "Luniks," the difficulty of orbiting around the Moon is explained: "It is impossible for the Moon to trap a rocket. It must either crash, or head on out into space. Only if the vehicle is slowed by the use of braking rockets can it remain captive."

The ion drive is explained and a new one, the plasma jet, is outlined. A plasma is a superheated gas such as might derive directly from fusion reactions. It could be the means of harnessing the hydrogen atom.

THE NEW SCHOOL by Howard William Ray. Exposition Press, N. Y., $2.50

THIS UTOPIAN fantasy by a novelist is at once naive and shocking, earthy and sublime, occasionally expert but more frequently awkward. Author Ray seems aware of the lack of narrative interest in his philosophical talkiness and intersperses his only action scenes, laid in bed, between regular periods of continence. It is not enough.

His "New School" is hardly that. Rather, it resembles the Good Life teachings of the founders of most of our modern religions.

Rating: **½

THE BEAST MASTERS by Andre Norton. Harcourt, Brace & Co., N. Y., $3.00

MISS NORTON draws mainly on the American Southwest as a background prototype in her latest juvenile, even though Earth has ben obliterated in an interstellar war.

Her young hero, a Navajo youth named Hosteen Storm, is Beast Master of a commando team composed of a hybrid dune cat, an African eagle and two small acquisitive and inquisitive meerkats. At war's end, he and his team settle on the planet Arzor, mainly to collect a tribal debt of vengeance against a rancher formerly of Earth.

Miss Norton writes so skillfully on the two operatic levels of horse and space that her young readers are sure to enjoy complete enthrallment.

Rating for youngsters: ****

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DANNY DUNN AND THE WEATHER MACHINE by Jay Williams and Raymond Abrashkin. Whittlesey House, N. Y., $2.95

DANNY, OF *Anti-Gravity Paint* and *Homework Machine* misadventures, is back again, misusing the marvelous inventions of the Dr. Doolittleish Professor Bullfinch. This time, an ionic transmitter, sort of a wireless power source, is the demon-ex-machina for, along with energy, it also creates room-size thunderstorms.

The authors reap plenty of humor from this promising situation, meanwhile sowing a considerable amount of meteorological knowledge in the process.

Rating for youngsters: ****

JUNIOR EDUCATION CORNER

MR. WIZARD'S EXPERIMENTS FOR YOUNG SCIENTISTS by Don Herbert. Doubleday & Co., Inc., N. Y., $2.95

MR. WIZARD, the creation of Don Herbert, is the famous TV scientific savant who stimulates scientific curiosity in his youthful viewers with his provocative experiments. The above book is equally thought-provoking and well planned, each chapter of experiments being written with a particular branch of science in mind.

ELEMENTS OF THE UNIVERSE by Glenn T. Seaborg. E. P. Dutton & Co., Inc., N. Y., $3.95

DESPITE THEIR seeming dissimilarity, this and *Man's Journey Through Time* both chart Man's progress through the ages. The story of civilization is the discovery of the building blocks of nature, and Man's laborious efforts to put them to his use.

Seaborg is truly qualified to teach — he is a Nobel Laureate, co-discover of nine elements, and the only man since Mendeleev to make a major change in the Periodic Table. His TV lectures are here presented in easily assimilable doses.

— FLOYD C. GALE

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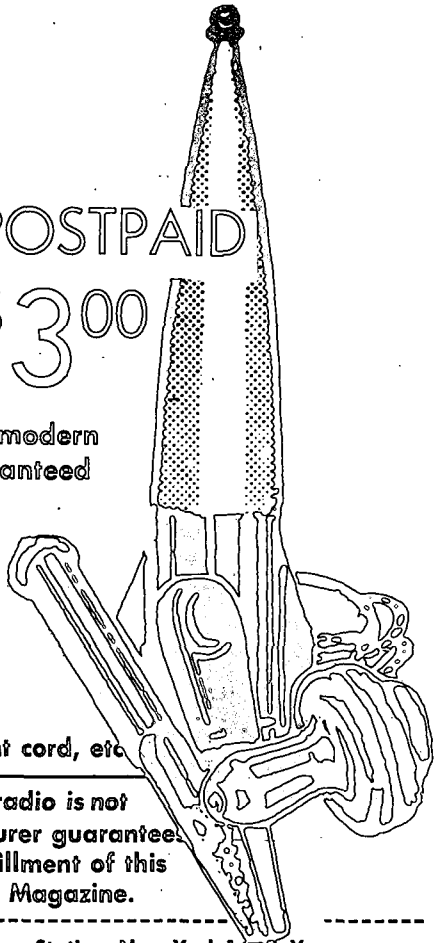

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THE TROUBLEMAKERS

What did Genetics and Hansen's Folly have in common? Why, everything . . . Genetics was statistical and Hansen's Folly impossible!

Illustrated by DICK FRANCIS

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By GEORGE O. SMITH

I

THE living room reflected wealth, position, good taste. In size it was a full ten feet by fourteen, with nearly an eight-foot ceiling. Light was furnished by glow panels precisely balanced in color to produce light's most flattering tint for the woman who sat in a delicate chair of authentic, golden-veined blackwood.

The chair itself must have cost a fortune to ship from Tau Ceti Five. It was an ostentation in the eyes of the visitor, who viewed it as evidence of a self-indulgent attitude that would certainly make his job more difficult.

The air in the room was fresh and very faintly aromatic, pleasing. It came draftlessly refreshed at a temperature of seventy-six degrees and a relative humidity of fifty per cent and permitted the entry of no more than one foreign particle (dust) per cubic foot.

The coffee table was another ostentation, but for a different reason than the imported chair of blackwood. The coffee table was of mahogany — terrestrial mahogany — and therefore either antique, heirloom, or both, and in any combination of cases it was priceless. It gave the visitor some dark pleasure to sit before it with his comparison microscope parked on the polished mahogany surface, with the ease of one who always parked his tools on

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tables and stands made of treasure woods.

There were four persons. Paul Hanford swirled brandy in a snifter with a series of nervous gestures. Mrs. Hanford sat in the blackwood chair unhappily, despite the flattering glow of the wall-panels. Their daughter, Gloria, sat in such a way as to distract the visitor by presenting a target that his eyes could not avoid. Try as he would, his gaze kept straying to the slender, exposed bare ankle and the delicate, high-arched foot visible beneath the hem of the girl's dress.

NORMAN Ross, GSch, was the visitor, and he subvocalized his tenth self-indictment as he tore his gaze away from Gloria Hanford's ankle to look into Paul Hanford's face. Ross was the Scholar of Genetics for the local division of the Department of Domestic Tranquility and he should have known all about such things, but he obviously did not.

He said, "You can hardly blame yourselves, you know," although he did not really believe it.

"But what have we done wrong?" asked Mrs. Hanford in a plaintive voice.

Scholar Ross shook his head and caught his gaze in mid-stray before it returned all the way to that alluring ankle. "Genetics, my dear Mrs. Hanford, is a statistical science, not a precise science." He waved vaguely at the comparison microscope. "There are your backgrounds for seven generations. No one — and I repeat, no one — could have foreseen the issue of a headstrong, difficult offspring from the mating of characteristics such as these. I checked most carefully, most minutely, just to be certain that some obscure but important conflict had not been overlooked by the signing doctor. Doctors, however, do make mistakes."

Gloria Hanford dandled her calf provocatively and caused the hem of her skirt to rise another half-inch. The scholar's eyes swung, clung, and were jerked away again.

"What's wrong with me, Scholar Ross?" she asked in a throaty voice.

"You are headstrong, self-willed, wild, and — " his voice failed because he wanted to lash out at her for her brazen and deliberate display of her bare ankle; he struggled to find a drawing-room word for her that would not wholly offend the hapless parents and ultimately came up with — "meretricious."

Gloria said, "I'm all that just because I enjoy a little fun?"

"You may call it fun to scare people to death by flying your air-car below roof level along the city streets, but the Department of Air Traffic says that it is both dangerous and illegal."

"Pooh!"

Paul Hanford said, "Gloria, it

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isn't that you don't know better."

Mrs. Hanford said, "Paul, how have we failed as parents?"

Scholar Ross shook his head. "You haven't failed. You can't help it if your daughter is a throwback — "

"Throwback!" exclaimed Gloria.

" — to an earlier, more violent age when uncontrolled groups of headstrong youths formed gangs of New York and conducted open warfare upon one another for the control of Tammany Hall. Those wild days were the result of unregistered, unrestricted, and uncontrolled matings. Since no attempt was made to prevent the unfit from mating with the unfit, there were many generations of wild ones — troublemakers. It is not surprising that, with such a human heritage, an occasional wild one is born today."

THE scholar took another surreptitious (he hoped) glance at the bare ankle and said, "No, you are not directly to blame. We know you wouldn't spawn a troublemaker willfully and maliciously. It's just an unfortunate accident. You must not despair over the past — but you *must* spend your efforts to calm the troubled future."

"What should we do, Scholar Ross?" asked Paul Hanford.

"I have to speak bluntly. Perhaps you'd prefer the ladies to leave."

"I'll not go," said Mrs. Hanford firmly, and Gloria added, "I'm not going to let you talk about me behind my back!"

"Very well. As Scholar of Genetics, I am head of the local Division of Domestic Tranquility. I would prefer to keep my district calm and peaceful, without the attention of the punitive authorities, and I'm sure you'd all prefer this, too."

"Absolutely!" said Paul Hanford.

"Now, then," said Scholar Ross, "for the immediate problem, we'll prescribe fifty milligrams of dociline, one tablet to be taken each night before retiring. This will place our young lady's frame of mind in a receptive mood to suggestions of gentler pursuits. As soon as possible, Mr. Hanford, subscribe to *Music To Live By* and have them pipe in Program G-252 every evening, starting shortly after dinnertime and signing off shortly after breakfast. Your daughter's dinnertime and breakfast I mean, and the outlet should be in her bedroom. It is not mandatory that she heed the program material all the time, but it must be available to set her moods. Finally, upon awakening, a twenty-five milligram tablet of nitrolabe will lower the patient's capacity for anticipating excitement during the day."

He paused for a moment thoughtfully, and added as if it were an

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aside, "I'd not go so far as to suggest that you — her parents — make a conscious effort to avoid listening to periods of Program G-252, but I'd definitely warn you not to fall into the habit of listening to it."

He eyed the ceiling thoughtfully, then consulted his notebook. "Come to think of it, I'll also give you a prescription for Program X-870 which you can use or not as you desire. Have this one piped into your bedroom, Mrs. Hanford, and try to strike a somewhat reasonable balance. Say no greater imbalance than about two of one to one of the other and if you, Mr. Hanford, spend any time listening to your daughter's program material, you should also counteract its effect by listening to an equal time of the program prescribed for Mrs. Hanford."

He turned back to Gloria and shook his head.

She smiled archly at him and asked, "Now what's wrong?"

"You," he told her bluntly. "If this delinquency weren't a mental disorder, I'd prescribe a ten milligram dose of micrograine to be taken at the first quickening of the pulse prior to excitement. I don't suppose you really regret your wildness, though, do you, Miss Hanford?"

SHE shook her head. "No, and I don't really enjoy the whole program you've laid out for me."

"I'd hardly expect anybody to approve of a program that is calculated to change their entire personality and character," said Scholar Ross. "But a bit of common logic will convince you that it is the better thing. Miss Hanford, you've simply *got* to conform."

"Why?" she demanded.

"We live in a free world, Miss Hanford, but it is a freedom diluted by our responsibility to our fellowman. The density of population here on Earth is too high to permit rowdy behavior. Laws are not passed simply to curtail a man's freedom. They are passed to protect the innocent bystander — who is minding his own business — from the unruly, headstrong character who doesn't see anything wrong in disposing of empty beer bottles by dropping them out of his apartment window, and justifying his behavior by pointing out that it is a hundred-yard walk down the corridor to the trash chute. When we live so close together that no one can raise his voice in anger without disturbing his neighbor, then we have the right to pass laws against such a display of temper. It works both ways, Miss Hanford. By requiring people to behave themselves, we ultimately arrive at a social culture in which no one conducts himself in such a way as to anger his neighbor into violence. Have I made myself clear?"

"In other words," said Gloria, "if

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it's fun, hurry up and pass a law against it!"

"Well, hardly that—" the scholar began.

"Tell me," she interrupted. "How long am I going to be on this pill-and-lullaby diet?"

"It may be for a long time. In severe cases, it is for the rest of the patient's life. On the other hand, we have quite a bit of evidence that your urge to excitement may dwindle with maturity. Oh, we do not propose to make a pariah out of you. Marriage and motherhood have settling effects, too."

"My baby—!" cried Mrs. Hanford.

"Your baby," commented Paul Hanford in a very dry voice, "is a college graduate, twenty years old."

"Nobody's asked my opinion," complained Gloria, swinging her leg and hiking the hem of her skirt another half-inch above the slender ankle.

"Nobody will. However, Miss Hanford, I shall place your card in the 'eligible' file and have your characteristics checked. I'm sure that we can find a man who will be acceptable to you — and also to the department of Domestic Tranquility."

"Humph!"

"Sneer if you will, Miss Hanford. But marriage and motherhood have taken the 'hell' out of a lot of hell-raisers in the past."

II

JUNIOR Spaceman Howard Reed entered the commandant's office eagerly and briskly. His salute was snappy as he announced himself.

Commander Breckenridge looked up at the young spaceman without expression, nodded curtly, and then looked down at the pile of papers neatly stacked in the center of his desk. Without saying a word, the commander fingered down through the pile until he came to a thin sheaf of papers stapled together. This file he withdrew, placed atop the stack, and then he proceeded to read every word of every page as if he were refreshing his memory about some minor incident that had become important only because of the upper-level annoyance it had caused.

When he finished, he looked up and said coldly, "I presume you know why you're here, Mr. Reed?"

"I can guess, sir — because of my technical suggestion."

"You are correct."

"And it's been accepted?" cried the junior spaceman eagerly.

"It has not!" snapped the superior officer. "In fact—"

"But, sir, I don't understand—"

"Silence!" said Commander Breckenridge. Almost automatically, his right hand slipped the top drawer open to expose the vial of tri-colored capsules. His hand

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stopped short of them, dangling into the drawer from the wrist resting on the edge. He looked down at the pills and seemed to be debating whether it would be better to conduct this painful interview as gentlemen should, or to let his righteous anger show.

"Mr. Reed," he said heavily, "your aptitudes and qualifications were reviewed most carefully by the Bureau of Personnel, and their considered judgment caused your replacement here, in the Bureau of Operations. You were *not*—and I repeat, *not*—placed in the Bureau of Research. Is this clear?"

"Yes, sir. But—"

"Mr. Reed, I cannot object to the provisions in the Regulations whereby encouragement is given both the officers and men to proffer suggestions for the betterment of the Service. However, a shoemaker should stick to his last. The benefit of this program becomes a detriment when any officer or man tries to invade other departments. This works both ways, Mr. Reed. There is not an officer in the whole Bureau of Research who can tell me a single thing about organizing my Bureau of Operations. Conversely, I would be completely stunned if any Operations officer were to come up with something that hasn't been known to the Bureau of Research for years."

"Yes, sir. I see your point, sir. But if the Bureau of Research has known about my suggestion for years, why isn't it being used?"

"Because, Mr. Reed, it will not work!"

"But, sir, it's *got* to work!"

"And you feel so firmly convinced of this that you had the temerity to bypass my office?"

"Sir, you yourself make a point of professing to know absolutely nothing about scientific matters."

"All right, we'll table this angle for a few minutes. Just what makes this notion of yours so important, Mr. Reed?"

"SIR," said Reed, "the maximum range for our most efficient spacecraft is only a bit over seventeen light-years to the point of no return. My suggestion deals with a means of extending that range a hundred times. Perhaps more. If it were my decision, sir, anything that even hinted at extending the cruising range would receive a maximum-urgency priority."

"In other words, you feel that anything we can do to extend our operations is the most important thing in the whole Space Service?"

"Well, sir, perhaps not *the* most important, but — "

"Your modesty is gratifying. I presume this modesty would prevent you from accepting any more than the Letter of Commendation from the Office of the Secretary?"

"I don't understand, sir."

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"You don't? Mr. Reed, was your desire to improve the efficiency of Operations a simple desire to improve the Service — or did you hope that this brilliant suggestion would, perhaps, provide you with a better assignment?"

"I still do not understand."

"Oh, you don't? Mr. Reed, why did you join the Space Service in the first place?"

"Because, sir, I hoped that I could be instrumental in helping mankind to spread across the Galaxy."

"Mr. Reed, have you sand in your shoes?"

"Sir?"

The commander sighed. "You hoped to go along on the voyage, didn't you?"

"Well, sir, I did have a hope that I'd become a real spaceman."

"And you're disappointed?"

Howard Reed's face was wistful, torn between a desire to confide in his commanding officer and the fear of saying what he knew to be a sharp criticism of the Space Service.

Then Reed realized that he was in a bad pinch anyway, and so he said, "Sir, I'm commissioned as a junior spaceman, but in three years I've only made one short test flight — and only to Luna! I am competent to pilot — or at least that's what the flight simulators say in my checkout tests. I'm a junior spaceman — yet every time I apply for active space duty, I'm refused! Three years I've spent in the Service, sir, solving theoretical and hypothetical problems in space operations. But aside from one test flight to the Moon, I have yet to set a foot inside of a spacecraft, let alone stand on the soil of another world!"

"You must learn patience, Mr. Reed."

"*Patience,* sir? Look, sir, I took this sedentary duty until I'd had it up to here, and then I began to pry into the question of why we have a Space Force, complete with spacecraft, and still do so little space traveling. I found out. We're limited to a maximum range of seventeen light-years to the point of no return. Even a trip to Eden, Tau Ceti, our nearest colony, is eleven-point-eight light-years, and that takes prodigious power."

"Granted," said the commander.

"But now, sir, if we could increase our range by one hundred times, this does not necessarily mean that we must actually power the spacecraft for that point of no return. It also means that we could charge the ship with one one-hundredth of its former banks for the short trip to Eden, Tau Ceti — which would leave a *fantastic* amount of storage and cargo and passenger space. Sir, we could start real commerce!"

COMMANDER Breckenridge gave no reaction.

"And you hoped to be among them."

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"Yes, sir! As a kid, I read about mankind's first exploration of space two hundred years ago, sir. Of course, I couldn't hope to set foot on a new planet, since every possible planet within the seventeen-light-year range has been looked over. But I wanted to see space myself, sir — and I did hope that I might extend Man's frontier beyond our rather small limit."

"Yes, I can understand the impatience of youth," said Commander Breckenridge. "For that, I can forgive you. But for trying to do the other man's job, I cannot."

"Sir, you're as much as saying that no one can have a good technical idea but the technical people at the Bureau of Research."

In answer, the commander flipped over several pages of the file. He said: "Mister Reed, this is what resulted in your abortive attempt to gain a scientific ear instead of forwarding your suggestion through the standard channels. I'm going to quote some pertinent parts of a letter from Commander Briggs, head of the Bureau of Research. Listen:

" — young genius has rediscovered the line of mathematical argument known here at Research as 'Hansen's Folly' because it was first exploited by young Spaceman Hansen about a hundred and fifty years ago. Hansen's Folly is probably to be expected of a young, ambitious young officer with stars in his eyes. I'd be inclined to congratulate him — if it weren't for the fact that Hansen's Folly turns up with such regularity that we here at Research hold a regular pool against its next rediscovery. You'll be happy to know that you, your young genius, and your department have 'won' for me the great honor (?) of buying dinner for the crew at the Officers Club on Saturday next.

"Don't be too hard on young Reed; the rediscovery of Hansen's Folly takes a rather bright mind. However, Breck, I *will* congratulate your bright young man if he can — without any further clue — go back over his own mathematics and locate the flaw. I'll — "

"There's more of this, but it isn't germane," said Breckenridge quietly. "This is enough."

"Enough, sir?" repeated Reed blankly.

"Enough to let you know what goes on. Now, Mr. Reed, you've committed nothing but a brash act of bad taste in bypassing the standard channels. Such an indiscretion demands some form of punishment, but if I were to attempt to outline punishment officially, it would be unfortunately easy for some legal eagle to point out that your behavior was, to the best of your knowledge, intended for the betterment of the Service. And furthermore that I was wreaking vengeance upon your hapless soul for having made my name the brunt of jokes at the Officers Club."

"I'm sorry, sir."

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"Being sorry is not enough, Mr. Reed. But I have a plan that will gratify everybody concerned. You want to become an active spaceman? Very well, your next tour of duty will be at the Space Force Station on the planet Eden, Tau Ceti. It will terminate when you have finally succeeded in locating the flaw in Hansen's Folly and can show the error to the satisfaction of Commander Briggs. Have I made myself clear, Mr. Reed?"

"Yes, sir, and thank you, sir. You're really doing me a favor, sir."

"Mr. Reed, despite the age-old platitude, it is wise to look the gift horse in the mouth, at least before saying thanks."

III

SCHOLAR Norman Ross smiled at his host's statement. "Yes, indeed, Mr. Harrison! Arranging these things so that we can maintain the Norm is often a delicate and arduous task. There are restrictions, and there are many variables involved, the most sensitive of which are the feelings of the people involved."

"Your job must call for the ultimate in diplomacy," said Mrs. Harrison.

To his host's wife, Scholar Ross nodded. "Yet," he said as an afterthought, "of even greater value is a high regard for the perfect truth. This includes the self-discipline of admitting it when one has been wrong, and being able to state precisely how, where, why, and, most important, to what degree."

"I don't understand," said his hostess.

"Mrs. Harrison, let's consider Bertram."

She cast a glance at her son. In an earlier age, he would have been called "indolent." During dinner, Bertram had employed the correct fork, plied his knife properly, conversed with his partners on both sides — yet she knew something was wrong.

"Bertram," she said, "haven't you been forgetting your pills?"

"Sorry, Mother," replied the young man tonelessly.

Bertram arose and left, and Scholar Ross said, "This is what I mean, Mrs. Harrison. Genetics is not a precise science; it is statistical. We can consider highly favorable the mating of two well-balanced people, and we can predict that this union will produce well-balanced children. Unfortunately we cannot guarantee the desired results. Hence we have anomalies such as Bertram, whose problem is simply a lack of drive. Now this is no fault of yours, Mrs. Harrison, nor of yours, Mr. Harrison. It may be the fault of Genetics, but if it is our 'fault,' then the fault lies in the lack of total knowledge; but not in the misuse, or lack of use, of what

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knowledge we do already have."

"I see what you mean, Scholar Ross."

"You'll also see the opposite when the Hanfords arrive. Here we have parents as stable as you two. You'll pardon me if I say that if all four of your characteristic cards were dropped at once and I had been expected to render a considered opinion as to their most favorable mating combination, I could render no preference, so equal are you. However, your union has produced Bertram. Conversely, their mating has produced a girl who is wild, headstrong, willful."

BERTRAM returned, seated himself quietly, and when Scholar Ross stopped talking, Bertram said apologetically, "I took a double dose, Mother."

"Is that all right?" she asked Scholar Ross.

"Probably won't do any harm," he said.

Mr. Harrison cleared his throat. "I'm not sure that I approve of Bertram marrying a headstrong girl, Scholar Ross."

Mrs. Harrison said, "William, you know it's best."

"For Bertram?"

"Now here," said Scholar Ross, "we must cease considering the welfare of the individual alone and start thinking of him as a part of an integrated society. No man is an island, Mr. Harrison. In a less advanced culture, Bertram would have been permitted to meet contemporary personalities. Perhaps might have met someone who — as he does — lacks drive and initiative, and the result would have been a family of dull children. Had he been unlucky enough to marry a woman with drive and ambition, their children might have been normal, but the entire home life would have been an emotional battlefield. And that —"

"Isn't that what you're about to achieve?" asked Mr. Harrison.

"Not at all. We shall achieve the normal, happy children who will undoubtedly grow into fine, stable adults. To gain this end, of course, their home life must be happy and tranquil. We'll prescribe for them — allowing for the emotional change that results from marriage and —"

The doorbell interrupted the scholar's explanation. "Allow me," he said, rising and heading for the apartment door. The Harrisons followed him at a slight distance. It was the Hanfords.

There was the full round robin of introductions and small talk: "You had no trouble?" "No, the intercity beacon was running clear —" "Lovely apartment, Mrs. Harrison." "Mrs. Hanford, here in Philadelphia we feel that we're almost in the suburbs." "Got a treat for you, Hanford — been saving a bottle of natural bourbon!" "That'll be a treat, all right!" "This is a real event. Scholar

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Ross." "You know, Mrs. Hanford, the vidphone hardly does you justice!" "Why, thank you!"

"Miss Hanford, may I present Bertram Harrison?" "How do you do?" "I do as I please. What's your excuse?" "Huh?" *"Now, Gloria!"* "Bertram, show Gloria the flower room. Go on, now!"

Scholar Ross watched the young couple walk through a French door to an outside terrace. He turned to Harrison and said, "Everything set?"

Harrison nodded. "Had a little trouble with the Music people till I used your priority. They said they'd have Program R-147 piped into the flower room. Frankly, I think R-215 is better."

SCHOLAR Ross laughed gently. "Probably happy association."

"Wife and I still have it piped in for our anniversary," Mr. Harrison admitted.

"Good for you! But R-215 is for normal, happily well-balanced young people who'd probably fall in love without it. R-147 is sure-fire for emotional opposites."

"Well, we finally got the program piped in, so what do we do now?"

Scholar Ross smiled quietly. "We wait. We get acquainted, because there is a very high probability that you two families will be united through the marriage of your children. Then I shall enter a new file in the Genetics Bureau of the Department of Domestic Tranquility. We shall watch through the years as your grandchildren grow, and make periodic checks, and thereby advance mankind's knowledge of genetics."

"Doesn't this sort of master-minding ever give you a God complex?" asked Mr. Hanford.

"Not at all. Were I God, I'm sure I could arrange things a lot better."

"In what way?"

"By Man's own laws, we are prevented from doing active genetic research on the human race. We apply what happens to mice and fruit flies to the human family tree. We've known for centuries how to breed blue-eyed or brown-eyed people, or, if we wanted, we could make the race predominantly fat or thin tall or short. However, our main aim is not the ultimate purity of any physical characteristic. Our goal is to produce a stable, happy people by eliminating the lethargic personality below and the excitable types above."

The scholar thought for a moment, and then, remembering Bertram's error in forgetting to take his go-pills, said, "But we are blocked by law. I can prescribe medication and therapy, but I have no power to force the patient to take the treatment. This is a most difficult problem, believe me."

"In what way?" asked Mrs. Harrison with some interest.

"The lethargic types are very

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apt to forget, or to dismiss the medication or the therapy as too much trouble. The overactive type is more likely to be water skiing on Lake Superior than sitting and listening to the tranquilizing strains of prescribed music, and the medication dumped down the drain instead of taken."

"You *do* have your problems, don't you?" said Mrs. Hanford sympathetically.

"Ah, yes. But our greatest problem is the overactive young female. Young males can be siphoned off in one way or another — work to be done that, unfortunately, females, can't also do." Scholar Ross smiled at Mr. and Mrs. Harrison. "So we actually are grateful for the lethargic types. They provide us with a fine sobering influence upon the —"

The scholar was interrupted by a wordless cry from beyond the French windows.

THE Harrisons, the Hanfords, and Scholar Ross leaped to their feet and started for the terrace. They did not get all the way to the French doors, for Gloria Hanford came stamping in. Her eyes were bright, and she was dusting one palm with the other.

"What — ?"

Gloria snapped, "Someone been feeding that oaf red meat?"

"But what *happened?*" asked Mr. Harrison.

"Oh, I could stand the big dummy acting as if he'd never been alone with a girl before in all his life. But to *ask* me for a kiss!"

"Is that what caused the eruption?" said Scholar Ross.

"When he *asked* me for a kiss, I told him that I was saving my kisses for a *man!*"

"And then?"

"Then he decided that I meant a man big enough to wrestle." Gloria laughed and then looked thoughtful.

"What's so funny — and not so funny now?"

"I just realized that *I like men!*"

"But Bertram?"

"Darned if it isn't the first time I've ever resented being pawed," said Gloria in a matter-of-fact tone, as if it were her hair-do rather than her virtue that was the subject of discussion. "So I grabbed a hand, hung the arm over my shoulder with the inside upward, and hip-tossed the big oaf over the railing into that silly little fish pond."

"Gloria!" exploded her mother.

"Poor Bertram!" exclaimed his mother.

Scholar Ross sighed. "These things often go awry at first. Bertram shouldn't have taken a double dose of his medication. And I'd guess that Gloria hasn't been meticulous about hers, either. Now —"

He was interrupted by the arrival of Bertram Harrison, who looked as if he'd just waded home across a mud flat at low tide. He

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stepped toward Gloria purposefully; the girl crouched in a judo position and said, "Want some more? Come and get it!"

"Now wait a moment," said Scholar Ross. "Gloria, where did you ever learn such brutal, belligerant tactics?"

GLORIA faced him, but kept one eye on Bertram. "Out of a book — where else in this calm old world?"

The scholar said, "You see, Miss Hanford, the results of your outrageous behavior? You've committed an act of physical violence. You've —"

The girl gave one sharp bark of laughter. "Who started it with whose caveman technique?"

"I think," said Scholar Ross to the four parents, "that this meeting should be resumed at a later date. Bertram must *not* overdose himself in a misguided effort to make up for omitted medication. Gloria must *not* avoid hers — and, Mrs. Hanford, you'll not only have to watch closely to see that she does take her pills; you'll also have to make sure that Gloria doesn't counteract them by surreptitiously acquiring some agitators to neutralize the tranquilizers."

"And suppose I call the whole thing off?" demanded Gloria. "Suppose I don't agree to share bed and board with this souped-up sardine?"

The room grew quieter until the background sounds were gone and from the patio came the faint, sweet strains of romantic music: Program R-147.

Finally Scholar Ross said, "Miss Hanford, we cannot force you to do anything, but we can make your life extremely uncomfortable if you do not comply with what we believe to be best for society. You will find — if you care to look it up — that there is a drastic shortage of eligible young women on the planet Eden, Tau Ceti."

"You mean — migrate — to the *colony?*"

"I mean just that."

Gloria Hanford's face went white. She understood that if Scholar Ross decreed Eden, Tau Ceti, for her, then she would end up on Eden, Tau Ceti, and it made no difference whether by force, coercion, or gentle persuasion.

Mrs. Hanford took a step forward and opened her mouth to speak. But before she could protest, her husband put out a hand and stopped her. His act was an admission that not money, position, nor logic would overrule such a decision.

"Eden, Tau Ceti," breathed Gloria. She turned and faced Bertram Harrison. "Junior," she said in a dry, strained voice, "if you'll wear mittens and handcuffs, let's go back in the garden and get acquainted."

Her father exhaled a full breath.

Mr. Harrison tapped him on the

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shoulder. "How about a sample of that bottle of natural bourbon?" he suggested.

"Not," Mrs. Hanford said shakily, "without me!"

IV

MAN'S first sally across the gulf of interstellar space had been more fruitful than his first fumbling exploration of the Solar System by a score of one to nothing. Of all the celestial real estate that orbits around old Sol, only the Earth will support life — at least as we know it. Survival elsewhere depends upon taking enough of Earth environment along to last of the trip. From the scientific standpoint, the first exploration of space was a brilliant operation, but before finding a place to accept the teeming millions of Earth's exploding population, the patient nearly died. For it was a quarter of a century until Murray, Langdon, and Hanover cracked the Einstein barrier.

By careful design, and then by counting the last gram and striking a mathematically adjusted balance between power bank and crew space, the range of a spacecraft was found to be slightly more than seventeen light-years to the point of no return.

Within seventeen light-years of Sol, there are forty-one other stars.

Of these forty-one stars, three are triple-sun systems, and twelve are doubles, which eliminates fifteen of them. Of the remaining twenty-six single stars, one is the blinding-blue giant Altair, two are white dwarf stars, and nineteen of them are the faint red dwarf stars of Spectral Class M, and that eliminates all but four of the original forty-one. Of this remaining four, Epsilon Eridani, Epsilon Indi, and Groombridge 1618 fall into the orange Spectral Class K, which is not too far away from Sol's Spectral Class G. But K is only close; it is no bull's eye when the combination of all the factors must add up to produce a planetary environment that will support human life.

And so, having eliminated forty out of the forty-one stars in Sol's neighborhood, only Tau Ceti remains. Tau Ceti is also a Spectral Class G star and therefore Tau Ceti was voted the star most likely to succeed, long before Man had the foggiest notion of how to cross the light-years, long before instruments sensitive enough to ascertain that Tau Ceti possessed a planetary system were developed.

Tau Ceti's planetary system can be used as an example of the brilliance of logic and reasoning. The second planet in the family of Tau Ceti is the planet Eden.

Eden supports life.

Or perhaps it is more proper to

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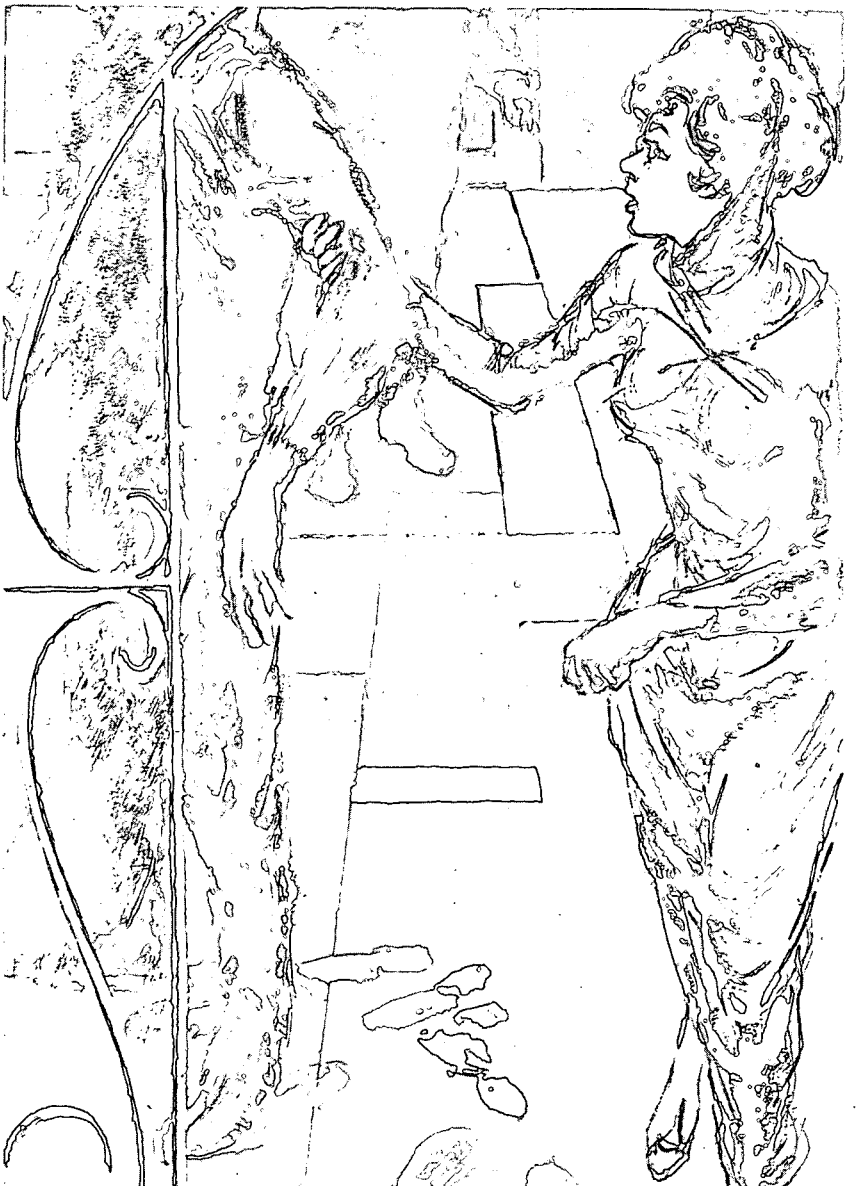

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say that Eden's environment permits life to support itself. Voltaire, through the mouths of his characters Candide and Pangloss, had a lot to say about Earth being the best of all possible worlds, both pro and con. He had never been to Eden. Eden was christened by the rules of real estate that dictate that a housing development situated on a tree-bald plain in central Kansas shall be called "Sylvan Heights."

V

JUNIOR Spaceman Howard Reed went through a brief period of excitement and then settled down to boredom. The excitement came from his first experience in space travel, and the thrill of standing on soil almost twelve light-years from home base. This thrill faded as soon as he discovered that the people on Eden, Tau Ceti, were far too busy to be bothered with the reactions of a junior spaceman.

If his duties had been demanding, Reed might have gone on for some time without becoming bored. But as a junior officer in the Space Service, Reed had no roots, no property, no basic interests on Eden.

The Space Service had been born out of interservice rivalry during a tense period of international competition. There had been a strong upsurge during the early years of the initial interstellar exploration. The leaders of the Space Service were quite willing to featherbed themselves into permanent positions of high authority. They discovered the best method lay in exploiting every method of scaring the public with the bogey of meeting some warlike culture "Out There." Then the years passed with neither sight nor evidence of any other form of life but Man and the creatures he carried with him. The Space Service found itself with little to do.

It did not stop the clamor for money, men and materiel. But the job of the Space Service was not hunting space pirates. The only place where the power banks of a spacecraft could be restored was in the hands of the Space Service itself, and it was an installation vast enough to tax the wealth and ingenuity of a whole continent to create. The job was not fighting interstellar wars with fierce, superintelligent interstellar aliens with a taste for human flesh — not, at least, until human and alien met.

So, in a desultory manner, the Space Service maintained a perimeter of lookout and detection stations that could have been completely automated . . . if it hadn't been that there were more Space Service Personnel than the Service could find work for.

The whole situation gave Junior

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Spaceman Howard Reed a lot of time to think.

The culture of Eden, Tau Ceti, completed the process.

Eden used old-fashioned telephones because its people were too widespread across the face of the planet to make the use of the vidphone practical. Radio broadcasting was maintained by the government as a public service information agency. It had to be. There were not commercial enterprises enough to support radio broadcasting on a profit-making basis. For there simply were not enough people. And if simple radio broadcasting could not be supported, there was not yet room for even the old flat-faced television, much less trivideo.

Theirs was a culture in a mixed state. They had the know-how for a highly technical, closely-integrated urban civilization, but lacked the hardware necessary to construct it. They were an aircar people, but they used horses. Horses can be raised. Aircars have to be fabricated. It would not have been prohibitive to trans-ship the basic tools and dies for aircar assembly from Earth, Sol, to Eden, Tau Ceti. But it would have been economic suicide to attempt to keep the voracious maw of an automated assembly plant satiated with raw material shipped from home base. And then, one week's run would have saturated the Tau Ceti market. They were a people who played their own musical instruments because they were faced with the very odd economic fact that the first phonograph record from the die costs five thousand dollars. Nobody makes a dime until fifty thousand of its brothers are sold. The population to buy fifty thousand did not exist.

In simple fact, Eden, Tau Ceti, was far from a flourishing colony. It was a classic example of the simple economic truth that a fully integrated mechanistic society can not be supported by a sparsely populated region.

AMBITION has many origins. The urge to return home became a drive. The result was Junior Spaceman Howard Reed's complete preoccupation with the mathematics known as Hansen's Folly.

As the months went by he exhausted his original knowledge. He took to the library, to the local schools, and to self-study to improve his grasp. He approached the basic mathematics of the space drive from several different angles, even going back to the old original Einstein Equations and learning their fault in the hope that this study might point the way.

Then, as the months began to grow into the close of his first year, Reed took advantage of the casually informal operation at the Space Service Base. He began to experi-

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ment with hardware on the theory that he would have a better grasp of the problem if he tried some empirical work as well as the academic approach.

Junior Spaceman Howard Reed had been on Eden, Tau Ceti, for eighteen terrestrial months before his superior officer, making a tour of inspection, opened the office reserved for him at the Administration Building. On the eighth day of his visit, Commander Breckenridge summoned the junior spaceman to his office. He asked, "Mr. Reed, have you been successful in solving the flaw in Hansen's Folly?"

"Well, sir, not exactly."

"Have you improved your grasp of the facts of life?"

"Sir? I don't quite understand."

"You don't? Well, perhaps you need some help. For instance, Mr. Reed, can you give me an estimate of the useful land area of Eden, Tau Ceti?"

"Sir, the total land area is about fifty million square miles. Perhaps about half of that is useful, or could be."

"Ah. You said 'could be'. Why, Mr. Reed?"

"Let's put it this way, sir. Whether a given acreage is useful often depends upon how badly it is needed. For instance, a plot of wooded land might well be ignored for centuries by a sparsely populated agrarian culture who had a lot of open plain to cultivate. At a later date, an increasing pressure of population might make it expedient and sensible to clear vast areas of tree stumps, boulders and all sorts of hazards."

"And here on Eden?"

"Well, sir, at the present time the population of Eden is about a hundred thousand. Fertile plains are growing wild with weeds because the land isn't needed yet. That is — er —"

"That is what?"

"Maybe I shouldn't have said 'wild with weeds' sir. After all, they have been encouraged. I'm told that the atmosphere smelled a lot stronger when Man first arrived."

THE commander sniffed and said, "It's pretty strong right now."

"You don't notice it after a couple of months," said Reed.

"I don't propose to be here that long," said the commander curtly. "Let's get back to your grasp of the overall picture." Commander Breckenridge leaned back in his chair and said, "No doubt you were exposed to Early North American History. You will recall that there was a strong pioneering drive in the human race that went on almost from the date of the discovery of North America until the opening phases of the so-called 'Industrial Revolution' — that is, beginning of the electro-mechanical era. Am I not correct?"

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"Yes, sir."

"Now, young man, what has become of this strong pioneering drive? How did it ooze out of the human race? Where did it go, and why? Why are six billion people living in crowded conditions on Earth, while here upon Eden, Tau Ceti, a mere hundred thousand people occupy — by your estimate — some twenty million square miles? Why haven't the crowded millions of Earth clamored for all this extra space?"

"Perhaps because space travel is so expensive."

"Only in terms of cash. To be sure, it might take practically everything that a man has to buy passage. I now ask you to estimate how many men and their families sacrificed everything they had, packed a few treasured possessions into a Conestoga wagon and headed for the West."

"I have no way of knowing, sir."

"No, of course not. Let me tell you what happened. In that glorious phase of Early North America, men, women, and even their children toiled from sunrise to sunset to scratch out their living. From the dawn of history, luxury and leisure belonged to the landed baron. Since wealth went with acreage, any man who could stake out a claim to acreage could also claim wealth. It was a matter of finding the unclaimed acreage first."

THE commander leaned forward to press his point. "Then came the industrial revolution and the age of automation. Industrial slavery ended in a clank of gears. Your little man no longer starved to death nor toiled twelve hours a day. The finest automobile that the wealthy man could buy was only three or four times as expensive as the car driven by the average workman. Therefore the idea of staking out arable land as a means to wealth became less and less desirable. Automation hit the farm. The landed baron changed into the elected presiding officer over a stock-secured corporation.

"Today," said the commander, "the man who leaves his home to migrate is not abandoning squalor and sorrow in the hope of finding something better. He's leaving luxury, culture, and leisure. For what? For the privilege of scrabbling for a bare existence. Now, Mr. Reed, are you beginning to understand?"

"I think so, sir."

"Good. Then you'll begin to revise your opinion as to the importance of extending the cruising range of our spacecraft."

Reed blinked, "Sir?"

"Be sensible, young man. A colony is a waste of effort unless it becomes more than self-sufficient. Until Eden, Tau Ceti, has become populated to the point where Eden can support her own highly technical culture, it is an economically

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unsound proposition." The commander glared at the young spaceman. "Must I be blunt? Every effort must be spent in raising the culture-level of Eden, Tau Ceti. That means increasing the population, Mr. Reed, until the numbers are high enough to pay for industrialization. Once the cities of Eden, Tau Ceti, offer the culture opportunity of the cities of Earth, then we'll have migration on a social level instead of the malcontents, rugged individualists, and petty lawbreakers who've been given the alternative of migration instead of incarceration.

"Now, Mr. Reed, do you see what I'm driving at? It would be far wiser of you to spend your time enhancing the aspect of Eden, Tau Ceti, than trying to figure out ways and means of getting to more distant stars and locating other distant planets — to which the human race wouldn't migrate."

"But sir—"

"Mr. Reed, I recognize in you the admirable spirit of adventure. But we must remember that this same spirit that once drove men to land on Earth's moon in a multistage chemical rocket was not enough to establish a tax-paying colony there. Now, about this project of yours. You say that you have not yet located the flaw in Hansen's Folly?"

"No, sir, but—"

"Mr. Reed, you realize that you'll stay here on Eden until you do?"

"Yes, sir, but—"

"And the longer it takes you, the more ridicule will be directed at you, at me, and the Bureau of Operations?"

"But, sir—"

"Mr. Reed, I'll also point out that there will be no promotion until your assignment is complete."

"I'm aware of that sir, but—"

"But what, Mr. Reed?"

REED said, "Sir, may I speak without annoying you?"

"If you've something to say, go ahead. I can hardly promise not to be annoyed before I hear what the subject is."

"Thank you, sir. In trying to solve Hansen's Folly I engaged in some physical experiment and measurement because I couldn't find any flaw in the mathematical argument on the abstract scale. As you know, sir, one of the ways to find out why something won't work is to try it. It isn't often the easiest or the simplest, but it is often the only way."

"So go on. What happened?"

"Sir, my hardware works. So far as I can see, sir, there is no flaw! I was right!"

"Commander Briggs of Research — "

"Sir, there must be some mistake."

"Silence! I'm not through! Commander Briggs seems to know

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more about my personnel than I do."

"Sir?"

"First, he offered to bet me a dinner at the Officer's Club that you wouldn't locate the flaw in Hansen's Folly by the time I made this tour of inspection. Knowing that you'd probably have no other ambition than to leave Eden, Tau Ceti, I snapped at this wager like a starving dog latching onto a piece of steak. I have lost, it would appear, which is only one dinner. But, Mr. Reed, when I accepted this wager, Commander Briggs compounded it by offering to bet me a dinner for the whole Bureau of Resarch that after not finding the flaw by means of the academic analysis, you'd resort to experiment in hardware. Knowing full well that you'd not have the temerity to divert Service Materiel for your own tinkering, I accepted that wager also. Then to top it off, Briggs added a bet of champagne and corsages for the officers' wives that you'd complete your hardware and still not locate the flaw, and that when I arrived you'd be firmly convinced that you'd proved your point in theory and practice and that therefore you were right and the rest of the known universe was wrong."

THE commander took a deep breath under which he swore gently but feelingly. Then he went on: "And so, Mr. Reed, I am going to be 'Guest of Dishonor' at the Officers' Club. I will, according to custom, be served the plate of baked synthetic beans whilst my contemporary officers and their wives partake of a gourmet's banquet of natural foods."

"Sir, I'm sorry."

"Being sorry is hardly enough!" The commander pawed through his attache case until he came to a file-folder which he looked through meticulously for several minutes as if justifying a carefully considered opinion. Finally he made a lightly pencilled note on the margin of one page and said, "Lalande 25372!"

Junior Spaceman Howard Reed gasped and blurted, "Flatbush, sir?"

Commander Breckenridge nodded curtly. "You will man the perimeter alien-spacecraft detection station and the astrogation beacon distance and direction equipment located on Flatbush, Lalande 25372. And you will stay there until you have Hansen's Folly completely solved. Do you understand?"

Junior Spaceman Howard Reed nodded unhappily.

Lalande 25372 was close to the maximum range, the seventeen-light-year point of no return. Any enjoyment in knowing that he would have to be commissioned one of the finer, more efficient little spacecraft in order to get there in

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the first place was completely wiped out in the knowledge that once there, it would have to stand inert awaiting his return, because there would be no power to spare on side trips. One did not, with subatomic power, carry a spare can of fuel for emergency.

VI

MRS. Hanford opened the door and saw Scholar Ross. She smiled uncertainly at him as she invited him in. In the Hanford living room, in the presence of Mr. Hanford, the scholar of genetics looked around cautiously and questingly. Hanford said, "Gloria is not here. She's out."

"Then I may speak openly."

"Of course. Is there some trouble — again?"

"Frankly, I'm not certain," said the scholar of genetics slowly. "I'd like more information if you'd be so good as to help."

"Of course we'll help!" exclaimed Mrs. Hanford. "What's bothering you?"

"How is your daughter getting on with Bertram Harrison?"

"Why, I'd guess they're getting along about as well as any other young pre-marriage couple. That's what the engagement period is for, isn't it? I mean, it's been that way historically."

"Yes, you're right," nodded Scholar Ross. "Did they rent the usual pre-marriage apartment?"

"Oh yes. They were quite the conventional young lovers, Scholar Ross."

The man from the Department of Domestic Tranquility smiled. "And you, of course, were the conventional parents of the affianced bride?"

"Of course. We were so pleased that we could hardly wait for Twelfth Night."

"And during that visit, were the appointments of the apartment proper?"

"Why, Scholar Ross!"

"No, no, Mrs. Hanford, you misunderstand. I implied no moral question. I really meant to ask if you knew whether Gloria and Bertram each and separately were properly continuing their therapy."

Mr. Hanford grunted. "As parents of the affianced bride," he said, "we're paying for it!"

Mrs. Hanford blushed. "I — er — snooped," she said.

Scholar Ross looked at Mrs. Hanford with an expression that indicated that snooping was an entirely acceptable form of social behavior. "And what did you find?"

"Everything entirely right." Then she looked doubtful and bit her lower lip. "Scholar Ross, I'm no authority in these matters. In Gloria's bathroom were the same-*looking* kind of bottles and pills that we got when you prescribed, and when

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I turned on the speaker in her bedroom it sounded like the same kind of music as I'd heard in her bedroom when she was living at home. It – frankly – depressed me."

"And Bertram's?"

"I know less of his medication. But I did listen to his music outlet. It removed the feeling of depression I'd gotten from Gloria's program material."

"That's quite right. It sounds reasonable."

SHE blushed again and looked at her husband. "Only one thing," she said very slowly.

"What's that?"

"I – er, hardly know how to put it. You see, when Gerald and I were affianced, neither one of us were undergoing any kind of corrective therapy and so I don't know how these things work out."

"What are you driving at?"

"Why, Scholar Ross, with neither of us undergoing corrective therapy, it didn't matter which one of the bedrooms we used."

Scholar Ross considered for a moment and then nodded. "Of course," he said with an air of complete finality. "That's it!"

"What's it?" asked Mr. Hanford.

"The situation becomes a simple matter of reduction to the law of most-active reaction. Look," he said, "we have one personality that requires an environment of stimulation to bring him up to normal, and another personality that requires a tranquil atmosphere to normal. Place them both in the tranquilizing environment and he is driven deeper into his lethargy, probably to the point of complete physical and intellectual torpor. Place them both in the stimulating atmosphere and he becomes normal while she goes into transports of sensuous excitement. This explains it!"

"Explains what?" demanded Mr. Hanford.

"Her recent behavior. Or rather escapade."

None of them heard the gentle snick of the lock in the front door.

"Escapade?" exclaimed Mrs. Hanford.

"We didn't know that she was in any trouble," said Mr. Hanford.

"That's just the point," said Scholar Ross. "Your daughter has the infuriating habit of indulging in outrageous behavior under the name of brilliant intellectual accomplishment."

Gloria Hanford said, "Why, thank you, sir!"

She dropped the scholar a deep curtsey, displaying several inches of slender ankle.

"Gloria!" demanded her mother. "What have you been up to?"

Gloria Hanford smiled at her mother in an elfin, yet superior manner. "I am the affianced bride of Bertram Harrison," she said softly. "Therefore my behavior,

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whether good, bad, or indifferent, is no longer the problem of my parents."

Her father said, "Gloria, I happen to be big enough in both the physical and intellectual departments to overrule both you and your husband-to-be. So you'll answer your mother."

"Why," said Gloria quietly, "I've done nothing wrong."

Mr. Hanford said to Scholar Ross: "What's your side of this?"

Scholar Ross said, "Last week the Westchester Young People's Club gave a costume ball. The young ladies were to attend this affair adorned in the authentic fashion of some period in the past, and a prize was to be awarded to the most novel, yet completely authentic costume."

"And," said Gloria with a smile, "I won!"

"Your daughter won because she has a talent for performing the most shocking deeds under a cloak of intellectual achievement."

"Do go on, Scholar Ross. What did Gloria do?"

THE scholar smiled wryly. "Style and fashion ceased to be logical when clothing was designed for sly provocation rather than as a protection against a harsh environment," he said. "We live in a mixed-up social world. We encourage communal swimming and sun bathing in the nude — and yet after five o'clock it is considered shocking to display more than the bare face and hands.

"So in order to combine the maximum shock-effect with the cloak of utter authenticity, Miss Hanford researched the styles and fashions until she located a brief period of a few scant months late in the Twentieth Century. Her costume consisted of a many-fold voluminous skirt of semi-transparent material that draped in graceful folds from waist to mid-calf. She was completely nude above the waist! To prove her point, she offered fashion stereos of the period from style magazines."

Gloria chuckled. "I might have researched back to the Old Testament," she said.

Scholar Ross shook his head. "As I say, her shocking behavior could not be criticized. She could justify it according to the rules."

Mr. Hanford shook his head and asked, "Gloria, what did Bertram think of all this?"

"Bertram carried the style stereos," said Gloria. "There wasn't any pocket in my costume."

Abruptly, Scholar Ross said, "Miss Hanford, how are you and Bertram getting along?"

"As well as could be expected."

"Meaning what?"

"Meaning that each of us lives our own life. Berty likes his sedentary, torpid existence. In fact, he'd like to be more of a vegetable than

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he is. It started with his taking my pills and that was all right, I guess. But when he started sleeping in my bedroom so that he could estivate under the tranquilizing music program you prescribed for me, that was too much!"

Scholar Ross looked unprecedentedly astonished. "So?" he demanded.

"What do you mean 'so?' What would any red blooded woman do? I moved out and into his bedroom, naturally."

"And then started taking his medication?" asked Scholar Ross curtly.

"Natch!"

"Oh, my God!" exploded Scholar Ross. He eyed Gloria intently. "How do you manage to get Bertram awake far enough to attend things like your costume ball?" he asked.

"Well," she said with a smile, "I am really strong enough to sling a hundred and eighty-five pounds of loosely-stuffed sausage over my shoulder in a fireman's carry and tote the inert mass back to its own bedroom so that its own music will rouse it enough to reach for its bedside bottles of medication. Nature then takes its course until the awakening. Then he goes along with my desires—because he knows that if he doesn't, I won't let him dive back into his complete inertia. It's very simple. Of course, it isn't much fun."

SCHOLAR Ross said, "Gloria, do you intend to continue this sort of self-centered, artificial life after you and Bertram are married?"

"I've given the future very little thought."

"You always have," said Scholar Ross unhappily. "That's been a lot of your trouble."

"So what am I supposed to do? Do you really expect me to marry that vegetable? I've got a life to lead too, you know. It may suit your overall program of genetics to breed a batch of normal children, but the same Book of Laws grants me the right to seek my own level of happiness."

"Granted—"

"Well, scholar, I can tell you that my idea of happiness is not a husband who comes into my bedroom walking like a somnambulist just barely able to cross the room before collapsing like a loosely-packed sandbag."

"What you need," said Scholar Ross firmly, "is a man who is strong enough to tell you what you're going to do."

"And where are you going to find one?"

Scholar Ross turned from Gloria to her parents. "Obviously," he said regretfully, "this proposed marriage between your daughter and Bertram Harrison is not going to culminate in a happy union."

"Did you expect it to?" asked Gloria.

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"I had hopes. I can only propose a course of action. Were you willing to embark upon your prescribed program of corrective therapy, and so become a normally active and emotionally stable woman, then the marriage might work out very well indeed."

"It's all my fault, of course?"

"Yes. Of course. The decision was yours to make."

"And how about that lump of lard you've foisted off on me?"

"Bertram Harrison's willing retreat into total lethargy is, of course, his own decision. But it, too, is only another aspect of the usual case. The strong-willed personality makes its own way. The weak one follows."

"I see," sneered Gloria. "It's all my fault!"

"Of course it is," snapped Scholar Ross. "Were you willing to correct yourself, you'd also have been willing to correct Bertram since yours is the stronger personality."

"So what's the next move? Do I get to try another dolt?"

"Hardly. You'd do the same with any of them."

"So what is it? Am I going to be exported to Eden, Tau Ceti as an incorrigible?"

Scholar Ross was silent.

MR. Hanford said, "Certainly there must be another way?"

Mrs. Hanford said, "Must I lose my daughter?"

Scholar Ross said regretfully, "There is another way, of course, but either way is essentially a loss of your daughter, Mrs. Hanford."

Mr. Hanford said, "And what is this other course, Scholar Ross?"

"It's called re-orientation."

"Brain-washing!" exclaimed Gloria.

"That's a harsh, colloquial term."

Mrs. Hanford said, "How does this re-orientation work?"

Coldly, as if he were discussing the repair of some inanimate engine, Scholar Ross said, "It starts with corrective surgery on the pituitary and thyroid glands. Next comes some very complicated neuro-cerebral surgery, somewhat resembling the crude, primitive process once called 'Prefrontal Lobotomy'. Nowadays it produces the desired effect without all of the deleterious side-effects. Then, once the patient is completely disoriented, the process of re-education takes place. The patient is extremely docile and highly impressionable. All decisions carry the same weight —"

"How do you mean that?" asked Mr. Hanford.

"Why, the decision to use blue or black ink in your fountain pen becomes as important as the decision of whether to cling or jump from a damaged aircar."

"Oh. And then?"

"Why, since the patient is docile and impressionable, we can mold

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the patient's appreciation of people, places, and events into conformity. Events of the former life are not erased, but they are viewed as if the patient had seen a trivideo drama instead of having been that person. The entire list of friends and acquaintances is changed because the patient's personality is so different that the former friends no longer have anything in common with the patient. It will be," said Scholar Ross, "exactly as if your daughter left you, never to return, and then next year you are introduced to a strange woman who bears a complete resemblance to your daughter. To whom," he added, "you eventually become emotionally attached because of your daughter's memory."

"It sounds pretty drastic."

"I shall not fool you. It is drastic, indeed."

"I don't like it," Gloria snapped.

"Yes," pleaded Mrs. Hanford. "What is the alternative?"

"Eden, Tau Ceti. I'll arrange transportation under the migration act, and she'll be permitted two hundred pounds of gross." Scholar Ross smiled thinly. "You can diet a few pounds off and thus increase the net weight of your allowable possessions," he said. "But, on the other hand, if you diet down to rail-skinny no one will take a chance on you."

Gloria demanded belligerently, "What am I, a raffle prize?"

"Why, that's no better than white slavery!" cried her mother.

"Oh, come now!" said Scholar Ross. "Miss Hanford will receive a home and a hard-working husband on a fine new world with unlimited opportunities."

Gloria Hanford snorted. "The term, 'unlimited opportunity' is just the optimist's way of describing a situation that the pessimist would call, 'lack of modern conveniences.'"

"Well, Miss Hanford, you have your choice. One of three. Corrective therapy and marriage with Bertram Harrison; total re-orientation; or migration to Eden, Tau Ceti. I'll not ask for your decision now. Give me your answer within thirty days."

"You can't force me!"

"No. I can't. All I can do is to point out your three avenues of future travel — and then point out that I do have the means of making your life so very inconvenient that you'll have no recourse but to make your choice from among the three desirable possibilities. Desirable, I must admit, means that which is most favorable to the furtherance of domestic tranquility!"

VII

LALANDE 25372 is a Spectral Class M star, a faint red dwarf not visible to the naked eye from Earth, Sol. Lalande 25372 lies fif-

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teen point nine light years from Sol, about fifteen degrees north of the celestial equator and not quite opposite the vernal equinox. It has planets, but this does not make Lalande 25372 unique. Like most of the planets found in space, neither mad dogs nor Englishmen would have anything to do with them — willingly. They are suitable only for the hapless wight whose erring foot has unhappily landed on the tender official toe.

The planet Flatbush, Lalande 25372, received its name from an obscure medieval reference to a form of punishment known as "Walking a beat in Flatbush," if we are to believe MacClelland's authoritative volume *The Origin of Place Names*.

Observed through the multipane window of the Station, Flatbush, Lalande 25372, was a pleasant enough planet, provided one could ignore the fact that there was not a sign nor trace of vegetation from the Installation Building to the horizon. A couple of hundred yards from the building there was a pleasant looking lake. The lake was indeed water, but it contained dissolved substances that would have poisoned a boojum snark. The warm wind of Flatbush rippled the surface of the lake, but no square yard of sail would be hoisted until someone first built a gas mask that would filter out the colorless gases that turned silver black. Fluffy clouds floated across the sky, but they rained down a mess that etched stainless steel.

Out There, near the perimeter of Man's five-parsec range of operations, subelectromagnetic detector beams scoured the sky. Taking the most pessimistic standpoint — the least possible combinations of Nature's infinite variety of environment — Nature's own profligacy with life-forms still demanded that somewhere, Out There, another race was plying the spaceways.

Someday this hypothetical race was certain to touch wings with mankind.

When that took place it was the duty of the Bureau of Operations to detect them, to intercept them, and to warn the men of Earth, Sol, that Mankind was no longer alone. The fact that the subelectromagnetic detecting beams had been sweeping space for a couple of hundred years without detecting anything had no bearing on the future. The beams must be maintained so long as a human man remained alive in space.

In addition to the detector beams, the outlying planets carried astrogation beacons. They were subelectromagnetic lighthouses, so to speak, that rang across space with known direction and ranging telemetered signals. Someday, Man hoped to fill the space lanes with spacecraft and the planets with interstellar commerce.

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Someday there might be another *Marie Celeste* plying its course with its crew inexplicably missing. But if this ever happened, it was not going to happen without the Space Service knowing precisely how many and which spacecraft were operating through that volume of space before, during, and after D-for-Disaster Day and M-for-Mysterious Minute.

The equipment, of course, was automated to modern perfection, with multi-lateral channels that would take over in case of component failure. Its factor of reliability was well above six or seven nines of perfection. But to admit that this perfection was adequate would have deprived the Space Service of a convenient minor penal detail to take care of brash junior officers. Manning such a station provided the junior officer with a wealth of time to contemplate his sins, and to mend his evil ways.

In the case of Junior Spaceman Howard Reed, this process consisted of locating the flaw that prevented Hansen's Folly from being Hansen's Analysis.

NOW, from the time of Alexander Selkirk, romantic history has been dotted with accounts of men who have been cast away with nothing more than their hands and their brains. And with these, they have succeeded in raising their caveman environment up to the level of modern technical conveniences.

Like them — having been unable to locate the flaw in Hansen's Folly by the theoretical approach during his tour of duty on Earth, Sol, and having similarly failed to locate the error in experimental hardware during his tour of duty on Eden, Tau Ceti — Junior Spaceman Howard Reed began to experiment on the spacecraft that stood parked on its launching pad two hundred feet from the Installation. There was plenty of equipment to work with. The Space Service did not stock its perimeter stations in a slipshod manner.

Furthermore, Junior Spaceman Howard Reed had plenty of time.

The account of his life and adventures is hardly worth telling. He had no distractions. He worked The months passed one after the other.

Flatbush, Lalande 25372 was so far out that there was no provision made for a regular tour of inspection. Nobody bothered to drop in on Junior Spaceman Howard Reed. Gabbling on the official communication channels was strictly forbidden, so the young junior officer was denied even contact by voice. No one had come up with an economically sound means of producing entertainment programs from Earth, Sol, on the subelectromagnetic beams and so he — like his fellows in the other perimeter

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stations — received neither news nor music from home.

He could terminate this tour of duty only by solving the riddle of Hansen's Folly, and then notifying his superiors on the official communications channels — or by tucking a note in the once-each-year supply drone that came laden with enough of Earth's environment to keep the young expatriate alive for another year.

The set-up was wholly conducive to work. There was time and there was equipment; his orders were to remain there until he had studied his way through the problem.

With nothing else to do, Junior Spaceman Howard Reed was deep in his investigation . . . when the drone spacecraft came down along the subelectromagnetic beacon and made its landing a dozen yards away.

The drone was standard spacecraft size, an unmanned hull laden with the necessities of life that would support him for a year.

It was the first one that he had ever seen. This was the first time that Junior Spaceman Howard Reed had had to face the problem of Supply. Packed in that droneship was enough earth environment to last a man a year. The perishables and expendables, as well as replacement for the lost fractions of the recyclables, were all there. They were dehydrated and deep frozen after all waste had been removed, then compressed into cubes of identical size for the most favorable packing fraction. Even so, it was a prodigious amount of stuff. Supply would have been impossible on a once-per-year basis, if the foul water of Flatbush, Lalande 25372, hadn't been distillable with ease.

THE junior spaceman eyed the droneship with a sudden burst of pride in his fellow man's accomplishment. Given a pre-programmed flight along telemetered beacons originating at either terminus, the running equipment within the drone would bulk much less than the same mass and size as a human and his needs. Until flight-decisions were necessary, the hardware pilot was as good as the human pilot — and far less subject to headache, tantrum, disappointment at not getting the Saturday night pass and resentment over being passed by at promotion time.

Then his pride gave way to sudden, prolonged thought.

The range of a spacecraft is computed from point of takeoff to point of no return. There was no way of restoring the powerbanks of a spacecraft except on Earth, Sol.

Now, of course, it is entirely possible to take off and just keep going until the powerbanks are depleted.

That will cover twice the stated range to the point of no return.

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Ships have gone out and off and away and have never been heard of again. It is possible that one or more of these have succeeded in locating an Earth-like planet beyond the point of no return, but the Earthmen at home will never know about it until the range is extended. The possibility of such a planet favoring human life and ultimately harboring a culture of technical competence enough to create and maintain the power restoring equipment is extremely remote.

For spacecraft that carry women are few and far between.

And it takes more than one man's lifetime to make use of the knowhow.

Junior Spaceman Howard Reed knew that away back in the Twentieth Century, the average engineer could make a guess, count on his fingers, and come up with a pretty shrewd estimate of the horsepower per cubic inch that could be stored by the various ways and means available to the age.

Removing the human pilot and his needs did give the droneship quite a bit more space for cargo and power. But, as he looked at the droneship standing there, it became plain to Junior Spaceman Howard Reed that there was not room in that size of hull for both the necessary powerbanks and the full year's store of supplies for one man.

Whereupon Junior Spaceman Howard Reed dropped his tools. He donned his space suit and crossed the intervening space to the droneship.

He began to examine the ship's running gear with a critical and suspicious eye.

He was examining hardware that was familiar to him. It took him no more than two hours to determine beyond a shadow of a doubt that the droneship's drive was built along the theories and mathematical analysis that he had been told simply did not work!

Someone had reduced Hansen's Folly to practice!

HE paused again. Hansen's Folly had been called a failure about two hundred years ago, but what did that really mean? He considered his history.

In 1724, Stephen Gray and Granville Wheeler made the proud announcement that they had succeeded in transmitting an electrical phenomenon along a wire for a distance of 682 feet. Two hundred years later the entire Earth was girdled with telegraph, telephone and cable wires and linked with the invisible bonds of radio waves.

In about 1904 the Wright Brothers made their first powered airplane flight. Forty years later men were flying in airplanes that carried a wingspread greater than the

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distance of the Wright's first flight.

Einstein's Barrier was accepted scientific dogma for a hundred years; but he, Howard Reed, was now standing in a spacecraft that had crossed the gulf between the stars at a speed that not only exceeded the velocity of propagated light — but exceeded this speed by a few hundred orders of magnitude.

So? So maybe they were right. Maybe Hansen's Folly was a failure.

But the running gear in this droneship was designed to the analysis produced by Junior Spaceman Howard Reed, and it worked. Furthermore, he had only the scornful word of Commander Briggs of the Bureau of Research that his arguments had been parallel to those of the hapless Hansen.

It would hardly be the first time in the history of the human race that some bureaucrat got fat on the work of his underlings who not only received no credit for their work, but were often hushed, hidden, or otherwise prevented from proving their right to the fame and fortune.

Angrily, Howard Reed stood up and cursed. They were not going to smother him in a peg-whittling job on a single-man post sixteen light years from home base, denied of all but official communications.

He was going to find out about this very strange business!

Junior Spaceman Howard Reed did not even bother going back to the Station. Its Outside detectors had been sweeping deep space for a couple of hundred years without detecting anything; its astrobeacons were employed once each year when the droneship arrived. Furthermore, both equipments were automatic, on the trips, set up to bypass the one-man crew of the Station by transmitting the information on the regular Channels.

So, there in the droneship, the junior spaceman merely disconnected the pre-programmed autopilot, clamped his hands around the manual gear, and took off for far-off Earth, Sol.

VIII

GLORIA Hanford opened her apartment door, made a double take when she saw the living room lights were on, toted up the list of unexpected guests, and assessed the situation in one brief moment. She stopped short on one high heel, pivoted, and said to her escort, "Not tonight, Joseph!"

"But —"

"I've guests," she said, placing a hand flat on her escort's chest.

"But —"

"My guests mean trouble," she finished, shoving. Her escort disappeared — walking backward and still trying to protest.

Gloria closed the loving room door with a gesture of finality, then

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turned to lean back against it. She faced her unexpected guests with an air of exasperated patience, as if by her silence she was inviting them to hurl the first bolt and by her attitude confident that she could turn it aside with ease.

She did not have long to wait.

They all started to talk at once. The resulting babble was unintelligible and the sound of the others' voices made each one of them stop without finishing. Silence fell again, and in the calm, Scholar Ross spoke up:

"Under the circumstances, Miss Hanford, I think we have the right to ask that you explain your actions."

Mr. Harrison grunted. "I say this is a waste of time. Let's get along with it."

Mrs. Harrison added, "Yes indeed, Scholar Ross. If you'll call the authorities, we'll sign the complaint."

Mrs. Hanford snapped, "I resent the implication that my daughter is wholly and solely in the wrong."

Mr. Hanford said, "In my opinion, Bertram Harrison isn't bright enough to come in out of the rain, let alone being smart enough to know what's good for him. Now — "

Mr. Harrison growled, "We come calling this evening and find our son deep under the influence of tranquilizers and the catalytic action of the mood music prescribed for this philandering young hussy—"

"I'm no philanderer!" cried Gloria. "I'm not married to your cold lump of lard!"

Scholar Ross spead out his hands in a gesture of supplication, as if he were pleading with the gods for a return to sanity. "Stop it!" he cried. "Stop it!"

HE turned to Mrs. Hanford with a shake of the head. "I am sorry. Your resentment of the fact that this affair is your daughter's responsibility is not going to change it."

"But he's—"

"Please, Mrs. Hanford. This engagement is not a matter of the personal choice of the participants. It gravely concerns Society. Now, insofar as the Department of Domestic Tranquility is concerned, it is the excitable, headstrong, unruly, willful personality that is dangerous to social stability. The calm and placid ones do not commit acts of violence. Indeed, Mrs. Hanford, were it not for the quiet, phlegmatic personality like Bertram Harrison, we in genetics would have a hard time finding a useful niche for belligerents such as your daughter Gloria."

Gloria Hanford said something under her breath. Scholar Ross eyed her suspiciously and demanded that she repeat.

"Cliche Sixteen," she retorted.

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"It pertains to the problem of leading horses to water."

He nodded. "Yes. The horse is laudably exercising as much free will as his equine position permits him. The same platitude can also be employed to point out that blind stubbornness may prevent him from doing something that is really a good idea even if someone else did think of it first."

"I say enough of this nonsense!" snapped Mr. Harrison. "Let's get this debate over with!"

"Now, just a moment," said Scholar Ross. "You have no legal standing. Miss Hanford is Bertram Harrison's affianced wife. Under law, any difficulties between them are strictly a civic matter. Bluntly, sir, only the party being damaged can sign a complaint, and after making a complaint it is up to the complaining party to prove that he is being damaged at the will of the accused."

"Scholar Ross, you and your Department of Domestic Tranquility may know how you hope to maintain a calm and stable social structure, but you don't know much about the law," said Mr. Harrison slowly and carefully. "One only need go back to the early days of common law to find a rather terse discussion of the proposition of maintaining an attractive nuisance. The owner of the attractive nuisance has a responsibility to the gullible citizens who are attracted."

"Meaning?"

"Meaning," said Mr. Harrison, "that Miss Hanford in this pre-marriage apartment did maintain a series of attractive nuisances. Tranquilizer pills. Soothing mood music. A person of calm tendencies would find them most attractive. It was therefore her responsibility to protect the other party. Now — when Bertram has been properly treated and is able to testify — I think we'll find that Miss Hanford not only failed to protect Bertram, but indeed encouraged him to help himself to her pills and sleep in her bedroom under the soothing influence of the mood music prescribed for her."

MR. Hanford snapped, "If this attractive nuisance is as you say, Harrison, why can't we charge that Bertram did little to protect Gloria from his own therapy?"

Scholar Ross raised a hand. "Permit me," he said, "to reiterate that it is the hypertonic, overactive personalities that create social troubles. A Bertram Harrison lulled into a semi-cataleptic state by the wiles of a Gloria Hanford would hardly be expected to rise in a sudden burst of strength."

"So no matter what I do, I'm wrong?" the girl asked.

"Not at all," said Scholar Ross. "It is your direct responsibilty —

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your *duty* — to do everything you can to establish a firm and stable family unit here with Bertram Harrison—"

"Sorry, Scholar Ross," said Mr. Harrison icily. "You haven't really heard me. Your notion that this affair is a civil argument between an affianced couple is not true. You imply that no laws have been broken. You are wrong. I am willing to sign a complaint right now that Miss Gloria Hanford deliberately induced my son to indulge in her therapy. It was her means of lulling him into a state of mind that would permit her to go gallivanting off on a date with another man."

"I am not married to Berty yet!" snapped Gloria. "Dating's still my right!"

"Oh," snarled Mr. Harrison angrily, "shut up or I'll sign a complaint that you administered medical treatment without a license! Insofar as the Harrison family is concerned, this engagement shall be terminated unfavorably. Come!" he said to his wife. She rose to follow.

Gloria stepped aside, but paused to ask, "Aren't you going to take Bertie with you?"

Mrs. Hanford said coldly, "He's already been taken to the hospital for treatment to bring him out of the trance you got him into. And so, Miss Hanford, will you please step aside and let me pass?"

And Mr. Harrison's parting shot was, "I shall sign my complaints in the morning—or if he is able, we'll make it thoroughly legal and have Bertram sign them."

He closed the door firmly.

Mrs. Hanford wailed, "Now what shall we do?"

Scholar Ross shook his head. "With this poor record, this noncooperation," he said slowly, "it will be well nigh impossible to arrange another union. Furthermore, if Harrison carries out his threat—"

Gloria said quickly, "If he wants to, he can talk Bertie into anything. Anything. Such as signing the most frightful complaints and being convinced of their absolute truth and justice."

Mr. Hanford said, "If that's true, he could also be talked back out of them."

Scholar Ross shook his head again. "That presupposes that you could arrange access to Bertram that couldn't be overcome by another talking-to by his parents. It won't work. The young man is a mental weathervane."

"So where do we stand?"

"As I say, we might as well prepare for the worst. If the case of Gloria Hanford ever comes under the scrutiny of the Law, she will be declared either a delinquent or an incorrigible, depending upon whether her escapades are ruled misdemeanors or felonies." Scholar Ross turned to Gloria Hanford. "I

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warned you. Now, where we of the Department of Domestic Tranquility have no power to force you into a proper course of action, you'll find that the Law most certainly has. Miss Hanford, the Law will decide just how dangerous you are to the civic peace. Upon that decision, the law will further decide what action it must take to protect that civic peace from you."

He paused. A silence followed his statements. He waited a few moments to let his words sink in. Then he walked to the door and said:

"As of now, the future of Miss Gloria Hanford is out of my hands."

Mr. Hanford said, "Scholar Ross, how bad is this likely to be?"

"A lot will depend upon how swiftly Bertram Harrison responds to the restorative treatment. With some luck and a brilliant attorney on your side the matter might not reach a major catastrophe. Tomorrow may tell."

IX

JUNIOR Spaceman Howard Reed said plaintively, "But this is the Bureau of Justice. According to the Regulations you are supposed to listen to me, at least."

The space officer behind the desk wore the three wide stripes of the commander's rank, topped by the fasces that symbolized the law. He was Commander Hughes, chief of the Space Service Bureau of Justice. He smiled at the junior spaceman but shook his head. "You would place us in a most difficult position were we to heed your plea without having the matter referred to us through official channels."

With some exasperation, Reed said, "Look, sir, I've been subject to a severe injustice. Why can't I at least tell my problem to someone?"

"That would be cutting across channels. It simply is not done."

"Commander Hughes," said the junior spaceman earnestly, "you're not serving justice. You're obstructing it!"

"Now see here, young man—"

"Commander Hughes, you're insisting that I request my superior officer to forward through official channels a complaint against him. First, sir, I point out that he would refuse my request unless he were absolutely certain that my case against him was ridiculously weak. Second, I'm certain that the request would bring quick retaliation."

Commander Hughes shook his head. "The Regulation provides that any reasonable request be forwarded. And the Regulation further provides that there shall be no punitive action."

Reed snorted. "Fine. And if I do find myself punished, must I next forward my request for investigation through the same officer?"

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"That is a serious charge, young man."

"I can substantiate it! Look, sir, quite a long time ago I made some scientific studies, and—"

"You're an Operations officer, Mr. Reed?"

"Yes, but—"

"Then you're not trained in science?"

"Let's not go on that rat-race right now," said the junior spaceman testily. "I've heard it before. That's why I'm here!"

"Very well."

Junior Spaceman Howard Reed took a deep breath and plunged into his long explanation. At the end, Commander Hughes nodded, his face in a non-committal mask.

"One moment now," he said. He turned to the working desk behind him and spoke into a telephone. It had neither visual plate nor amplified output; only the user could know what was being communicated, and with whom.

"Now we'll see," said the commander as he hung up the telephone.

WITH the awkwardness of a stopped trivideo drama they stood and sat there motionless and silently as the minutes dragged past. Ultimately there was a gentle alarm ring from one of the desk drawers. Commander Hughes opened it to extract a couple of yards of stereofac paper.

"Your service record," explained the commander, picking up a reading prism and starting at the top. "Just another moment."

Another half dozen minutes went past.

"'Junior Spaceman Howard Reed,'" the commander read quietly at last, "'has an exemplary record.' That is Commander Breckenridge's opinion, if we are to believe what we read in this record. Oh, perhaps, he thought, a bit headstrong and mildly argumentative, factors which he considered balanced by a faculty for deep concentration."

"And how about my being transferred to Eden, Tau Ceti? And then to Flatbush, Lalande 25372?" Reed demanded.

"'Reasons for transfer,'" read Commander Hughes from the record. "'Junior Spaceman Howard Reed is ambitious and overactive. In the considered opinion of Commander Breckenridge, he will make a fine superior officer once his duty-experience has the proper breadth.'" The commander looked up and waved a hand at the length of stereofac. The fasces wrought in gold above the stripes glittered in the light. "Were it not for the Regulations against permitting a junior officer to inspect his own service record," said Commander Hughes with a smile, "I'd let you see for yourself that nowhere on this record is there a single word that cor-

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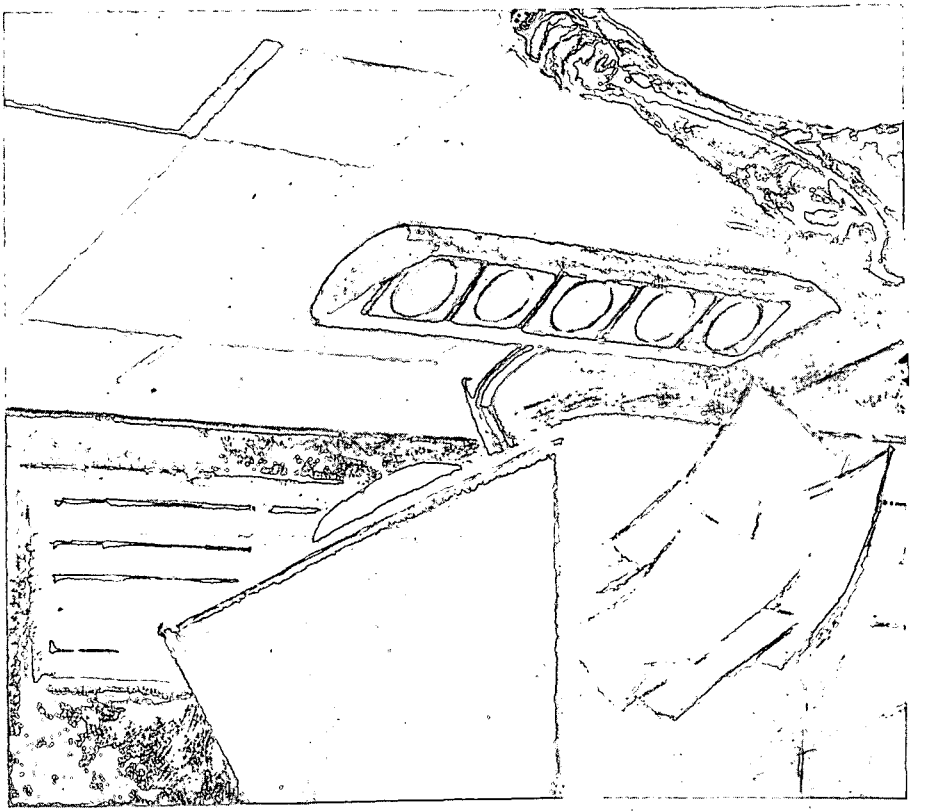

roborates your suggestion. Your tour of duty on Flatbush, Lalande 25372, and your earlier transfer to Eden, Tau Ceti, were merely the standard tour of duty, granted to satisfactory junior officers as a means of properly broadening their experience."

"In other words," snapped Reed angrily, "the fact that I have crossed space in a craft powered by a technical suggestion made by me some years ago does not prove a thing."

"Can you prove that you made any such technical suggestion?"

"Yes. Call Commander Briggs of the Bureau of Research. Call Commander Breckenridge of the Bureau of Operations. Demand that they state under oath, whether I did or did not make such sugges-

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tions. I was told my ideas were worthless."

"In other words, the Bureau of Research says it wouldn't work?"

"But look, sir! I drove a spacecraft all the way from—"

THE Bureau of Justice officer held up a hand.

"Look," said the junior spaceman angrily, "all I want is justice!"

"And justice you'll get!" retorted Commander Hughes. "First, Mr. Reed, let me ask how you obtained permission to leave your post on Flatbush, Lalande 25372, so that you could come to the headquarters in person to state your plea? Or was this trip authorized?"

"Well, sir — the detector and beacon stations are completely automated and —"

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"In blunt terms you are absent without leave?"

"Well, sir—"

"Junior Spaceman Howard Reed, you will consider yourself under personal arrest. We have no alternative but to place you in the custody of the Space Security Police. Remain as you were!"

Like the fabled case of the drowning man, Junior Spaceman Howard Reed reviewed his past in a single flash before his eyes. In the second blink, he covered his present. It wasn't to his liking.

Having covered his past and discarded his present, he next inspected his most probable future and came to the almost immediate conclusion that there wasn't very much in it for him. He had never heard Napoleon's statement that God was on the side with the heaviest artillery, but, in his own way, Junior Spaceman Howard Reed came to a parallel conclusion. Justice was on the side of the heaviest rank. Bitterly, he reflected that the reward for a technical suggestion of great merit was that they wouldn't make any trouble for him — so long as he didn't try to claim credit for it.

He came back to his dangerous present quickly. Commander Hughes was talking briskly into his secret telephone.

With a quick gesture, the junior spaceman leaned forward over the desk and snatched the instrument out of the senior officer's hands. He hauled in on the connecting cord until it came taut, and then he yanked, ripping the cord from its terminals. Brusquely, he dropped the telephone instrument into the commander's waste basket.

Then as bells began to ring and corridor horns began to sound, Junior Spaceman Howard Reed left the administration building of the Bureau of Justice on a dead run. Out in the street the wail of a siren began to climb from its throaty basso to its ear-splitting ululation.

X

GLORIA Hanford awoke, as she always did, with full awareness, like the transition of a small animal from slumber to flight. It was not a languid hand that reached for the telephone that had awakened her but an alert one. It flipped the accept button up and the vidphone eye button down in a single twisting gesture of thumb and forefinger. It was not modesty that caused the turn-down of the vidphone eye. It was vanity. Gloria Hanford deemed unbrushed teeth, uncombed hair, and unwashed face both unacceptable and unattractive.

"Gloria Hanford here. Go ahead."

"Scholar Ross calling. Miss Hanford, you should know so that you can be prepared. Bertram Harrison

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has not yet responded to corrective therapy."

"Not — yet — responded." she repeated slowly. "Just how bad is this, Scholar Ross?"

"It is quite grave. It's possible there may be cerebral deterioration."

"You mean Bertram might even go from bad to worse?"

"Miss Hanford, will you cease treating this as if it were a comedy? You may be defending yourself against charges of criminal negligence. It might even get to the charge of homicide before it's done."

"Homicide? But he isn't dead!"

"Fifth degree homicide," said Scholar Ross, "comprises the process of causing by any means the loss of impairment of personality or intellect. In layman's terms, *brainwashing*."

"So?"

"So if I were you I'd dress and be ready for the authorities. Harrison forced a special session of court last night and had Bertram declared as invalid-incommunicado. Since your engagement was formally dissolved, this places Bertram's well-being under the discretion of his next-of-kin blood relations. Father Harrison is prepared to prosecute to the fullest extent. He's even petitioned for the right to take action against the Department of Domestic Tranquility for what he calls 'incompetent meddling.' So you see, it looks bad."

"Maybe there ought to be some thoughtful laws passed to protect we active ones from the dolts and dullards," said Gloria. "Okay, Scholar Ross, I'll take steps!"

In a flurry of expert motion, Gloria Hanford dressed, packed, and left.

The authorities who came for her hadn't had enough experience in dealing with the hypertonic, overactive, fast-thinking, anti-social type. They expected to find a slightly dizzy-minded, still half-asleep amber girl, unable to grasp both an idea and a dressing gown at the same time. They would not have equated their notion with the trim, alert, neatly and completely dressed young lady they passed on the stairs if it hadn't been for the standard, legal locks on all apartment doors. A tiny flag filled a small aperture only when the full bolt was cast home by a flip of the inside key.

Its absence meant that no one was inside.

The chief of the group forced his mental image through a mental photomontage that started with the original picture of the half-awakened young woman tossing a tousle of hair back out of one eye, passed through a much-abridged version of the process of female dressing, and concluded with the trim and striking number they'd

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passed on the stairway. Add important item: As an accessory, whistle-bait was also carrying an overnight bag in one formal-for-travelling, white-gloved hand.

Nudged, his memory was good.

He hauled his handset out while his men were still making dead certain that the little flag on the lock meant precisely what it said. By the time they were convinced that the apartment was truly empty and the lock bolted from the outside, he had unabashedly reported his failure, and was concluding a very excellent description of the fugitive Gloria Hanford.

XI

THE average citizen, faced with an impressive uniform, falls into one of two very widely divided camps. One of these camps contains those of us who are impressed by the visible, exalted rank of the wearer.

So, by the simple process of snapping, "Official business!" at the driver of a skycab and simultaneously tossing the driver his official I. D. card in its ornate leather folder, Junior Spaceman Howard Reed succeeded in commandeering a skycab.

He took off, leaving the driver in a razzle-dazzle dream of collecting mileage from the Space Service whilst he spent the time comfortably relaxing in a pub. Protected from public gaze by the camouflaging skycab, the junior spaceman proceeded to cruise up the middle level of Ancient Fifth Avenue, driving a full eighteen inches below the legal altitude set for cruising skycabs.

He turned on his pocket set to listen to the details of the search that was being organized for him.

Above him, all around him, even in the subways below him, the vast and efficient organization of the Military Space Service was converging. This organization had the will and the manpower to scour this city of twenty million people almost literally soul by soul if the need be, to locate a young officer in the uniform of a Junior Spaceman. He might be driving a Military Vehicle, but more likely would be found in one of the many public vehicles or public carriers that the city offered for civilian transportation. There was also the high possibility that Junior Spaceman Howard Reed might be located afoot on the static sidewalk or on one of the tramways.

And so, mentally clocking each time-point and making a careful note of the check-points, the junior spaceman built up a mental map of the city and its danger points. Until the laws of simple logic failed to operate, he was going to be exactly where they weren't.

He was, in the driver's seat of a skycab, precisely as invisible as

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The Purloined Letter. But now, if he were to drive his skycab away from the cruising level, he needed one more accessory. He had time. So long as the Military was looking for a Military man in Military surroundings and in a Military manner, he was as safe from detection as if he really owned the skycab he'd commandeered.

The civilian police were closer to success.

Called by the chief of the arresting party who'd arrived at Gloria Hanford's apartment too late by minutes, the minions of Law and Order converged in their civilian efficiency. Logistically, it was a simple matter of hare and hounds. The hare couldn't win. Only one question was important: Which of the hounds would?

Afoot and by jetcopter that englobed the area, they closed in. By the application of stored memory and studied information they erected invisible barriers at every exposed point along the most probable trail of their quarry, from the street outside of her apartment door to the garage stall in Monticello. Then, as a final clincher, they installed three men in Gloria Hanford's airscooter itself.

By virtue of the unexpected movement one can elude the cops for a time. Gloria, on the street before her apartment building, almost went into despair when she saw that there was no skycab within hailing distance. She almost took it as a personal affront.

But this was hardly the time to stamp her sandals on the hard pavement or to write letters to the Commissioner of Public Carriers.

SHE turned and disappeared into the tramway entrance heading North along Waterfront Avenue. Her coin had hardly hit the bottom of its slot when the mobile police converged to land on the spot she'd just vacated. The foremost of them saw her trim figure disappearing into the distance, eclipsed by the myriads of innocent souls whose only desire was to make use of the same Northbound Tramway.

The pursuit began to reshape its surface of detection from englobement to a cylinder, the axis of which lay congruent with the Northbound Tramway.

Again, she held the advantage of knowing her own decision whereas her pursuit had to divine her plans by analysis of her actions and making use of extrapolation. Gloria Hanford abruptly stepped off the Tramway at Fifty-third, walked briskly three long blocks to LaGuardia's Sixth, found herself facing a group of burly policemen, and stopped long enough to think. One of the cops shoved a galton whistle between his teeth and blew a supersonic blast that registered on every cop's detector within a quarter mile. Audibly a

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siren wailed. Inaudibly and invisibly the drawstring web of civic forces began to close in.

Once more Gloria stepped into the kiosk of a tramway, the Crosstown. She rode one more block to Ancient Fifth and stepped off. With a wave of her hand, and then the most startling process to be found in a woman, Gloria Hanford poked two fingers in her mouth and let go with a shrill, piercing whistle that made every skycab driver within a half mile come to the point of 'customer's alert!'

She made her point.

The one accessory that Junior Spaceman Howard Reed needed was a passenger, preferably a female passenger that could be identified as a female for a hundred yards through a high fog driven by a blinding gale. Old, beautiful, young or ugly didn't matter, so long as it was unmistakably woman. The Military wouldn't stop a skycab with a female passenger.

He needed his passenger because, until he could pull the taximeter flag — having filled the compartment with a customer — he was constrained by law to cruise. Cruising would get him nowhere; what he needed was the flag-down ticket of admission to the upper traffic levels.

The whistle shrilled at him; he looked; and then with his spaceman's skill, Junior Spaceman Howard Reed made a mad reverse spiral landing that nosed out a half dozen other cursing drivers. He hit ground zero at velocity zero on target zero and flipped open the skycab door so close that Gloria Hanford did not have to take a middle ground step to gain entry.

He took off with a rush that tossed his passenger into the deep seat and slammed the compartment door without human effort. Then he went into a cruel climbing turn that wore away twenty thousand flight miles of the engine bearings. He leveled off a thousand feet above Ancient Fifth Avenue's topmost fast traffic level, and set his homing and warning beacon to zero on the spaceport.

It did not bother him that his passenger hadn't taken the time to supply him with the destination she desired. After all, Junior Spaceman Howard Reed was not really a skycab driver. He didn't care.

Gloria Hanford rebounded from the soft cushions of the skycab compartment and struggled her way into a position that gave her a good look out of the broad rear window. Her driver's mad upward spiral made her dizzy, but from the higher levels it was definitely obvious that there was considerable concentration of movement down there below. Men and ground cars as well as jetcopters were closing down upon the spot they'd just left.

It did not bother Gloria Hanford that her driver hadn't waited

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to inquire as to her destination. She was just happy that he hadn't. Her destination consisted of swift flight along any vector in a solid sphere; hers was a reverse destination properly identified by the word "elsewhere."

BEHIND them the city erupted with a criss-crossing of radio-directed searchbeams, catching and identifying skycar after skycar. Up from the city's traffic levels came jetcopters and squad hoppers and some raid-gun carriers; personnel boats; even a sprinkling of mobile communications bases. To one side and almost behind them a flight of star shells burst in a fire-fall of gorgeous color. To their other side a stream of warning tracer streaked.

Howard poured on the coal.

Gloria made no protest; it was a most satisfactory agreement.

They buzzed across the Jersey Flats. He brought the skycab down on a flat slant landing that arrowed directly in and touched ground and skidded to a stop with all landing-gear brakes locked. They slid to within a few yards of the spacecraft.

Only then did the junior spaceman pause to speak to his passenger: "Sorry, but I'm in a jam. So long!"

He leaped out of the skycab, raced along the ground, went up the ladder on a dead run, flipped into the spacelock, snapped the "Close" switch as he passed the inner portal — and then, without waiting for any pre-flight checkout, Junior Spaceman Howard Reed resigned from the Space Force by slamming his controls into an emergency and unauthorized flight program that took him up and out of Earth's atmosphere in barely more than nothing flat.

When he was free and clear, he relaxed in his pilot's seat, swiveled it around . . . and boggled, bug-eyed, at his passenger.

Gloria Hanford, still trim and shipshape in her white sharkskin suit, still carrying the overnight bag in her formal-for-travelling, white-gloved hand, sat in the spare seat.

She said: "I'm sorry about this, too, but it so happens that I'm also in a jam. Where do we go from here, Spaceman?"

He eyed her. "Where do you want to go?"

Gloria chuckled in a throaty voice. "Away," she said.

"Can you cook?" he demanded abruptly.

"Yes — why?"

"Then go rustle up some grub from the galley," he directed. "I'll have to keep an eye on this crate until we're free and clear. We can decide what to do next after we have time to think."

She looked at him strangely. Her own attitude puzzled her. It was the first time she'd been given an order that she hadn't resented, but

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then of course his direction made very good sense.

He looked upon her as she rose — and he found her fair.

She was. Gloria Hanford was an extremely attractive dish in her own right. Amplified a few million-fold by the spaceman's enforced isolation on Eden, Tau Ceti, and later upon Flatbush, Lalande 25372, she was a dream. Either locale would have the result of making Medusa the Gorgon look like Miss Universe of All Time, but Gloria Hanford didn't need any handicaps.

By some strange chemistry of non-material radiation that required no catalyst, there was no question between them.

Oh, they had a lot to find out about one another, but they had plenty of time for that.

That and other things...

XII

IN the Officers' Club on Earth, someone said, "What's the latest report?"

Commander Breckenridge of Operations said, "Last detected by the station at Last Gasp, Ross 780, and going like hell wouldn't have them."

Commander Hughes of the Bureau of Justice said, "They're going at it rather early, aren't they?"

Scholar Ross of the Department of Domestic Tranquility waved at his comparison microscope and its data cards. "It would be hard to find two people better suited to one another." He looked at his watch and smiled. "I'd say that by now they've both forgotten completely that they were ever strangers."

Commander Briggs of the Bureau of Research refilled the glasses with the finest nonsynthetic vintage champagne that the cellar of the Officers' Club could provide. He held his glass high and said, "I toast the bride and groom and the ultimate colonization of the Galaxy — by subterfuge!"

But Scholar Ross pulled the hand down. With a shake of his head, he held his own glass high. "Sorry, Briggs. But this time we toast the reactionaries, the die-hards and the rule-ridden old guard who have to work like the very devil to pair off a deserving young couple, and then force them into finding a home of their own — on some other planet.

"Gentlemen. To the Trouble-makers!

"Ourselves!"

— GEORGE O. SMITH

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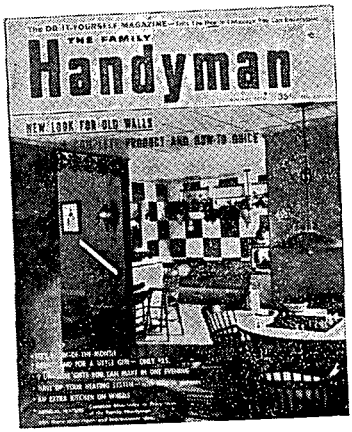

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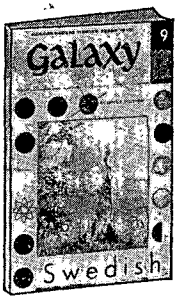

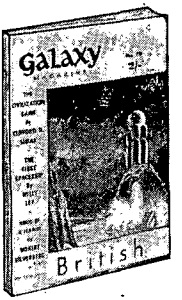

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